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INLAND BOAT SERVICE: FREIGHT RATES ON FARM PRODUCTS AND TIME OF TRANSIT ON INLAND WATERWAYS IN THE UNITED STATES.

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PURPOSE AND SCOPE OF INQUIRY.

The purpose of this inquiry was to collect information relative to freight rates and time of transit of farm products carried on inland waterways of the United States. It being impracticable to collect complete data, the inquiries were made to cover a large number of representative routes and commodities. The freight rates apply to September and October, 1912, when a large part of the agricultural products of 1912 was moving to market and, naturally, traffic on waterways would be relatively large. The freight rates by boat were obtained directly from captains, agents, and other officials of steamboat lines. Some reports for distances were also obtained from these persons, but mostly from the Chief of Engineers of the United States Army, who has charge of the improvement of waterways. For minor items and for verification other sources were used; they included notes made by the author at various times in the course of field work, information received through correspondence, and data gathered from various printed matter.

RIVER TRAFFIC DEFINED.

River traffic as discussed in this bulletin is to be distinguished from the traffic by coastwise vessels and on the Great Lakes. Conditions are different in many respects between the river transportation and that conducted by the large vessels on deep water. One point of difference lies in the size of the river boats as compared with the lake and coastwise vessels. A large freight steamer on the Great Lakes will carry as much as 400,000 bushels of wheat at one load. On June 30, 1912, the average gross tonnage of vessels on the Great

Lakes was 876 tons of 100 cubic feet, while the average for vessels on the western rivers was only 78 tons measurement. The carrying capacity of river steamboats is increased by the use of barges. This is especially true in the shipment of coal from the Pittsburgh region to New Orleans. From 30 to 50 or more barges, each carrying about 1,000 tons (of 2,000 pounds), may be moved by a single towboat. In ordinary river freight service, one or more barges may be taken, especially when a lot of lumber or brick is to be carried. The use of a large number of barges is not practicable in the Great Lakes or the coastwise traffic, because the rough water would make it difficult, if not impossible, to handle them. Towing is done on the Lakes and ocean, but the vessels towed are larger in size than the river barges and only a few are taken at a time.

RELATIVE IMPORTANCE OF RIVER TRAFFIC.

The relative importance of receipts by river as compared with the total receipts by rail and water of various farm products at leading river ports is shown in Table 1. A considerable fraction of the wheat and corn received at Baltimore, Md., comes from landings along rivers which are tributary to Cheapeake Bay and is carried partly by steamboats and partly by sail vessels. During the five years ending with 1912 these receipts by water at Baltimore ranged from 10 to nearly 30 per cent of the total receipts of wheat and from 3 to nearly 15 per cent of the total receipts of corn.

Cincinnati, Ohio, also has a large river trade in some products, notably tobacco. Of the total receipts of tobacco during the five years ending with 1908, from 10 to 20 per cent came by river boats. This applies to tobacco packed in hogsheads, which formed all but a small fraction of the traffic in that commodity. For other articles the relative importance of the river trade was not so great. During the five years mentioned about 5 per cent of the total receipts of eggs were brought in by steamboat. Apple receipts averaged from about one-third of 1 per cent of the total to more than 12 per cent. Relatively little of the grain brought to the city came by river, the average being considerably less than 1 per cent of the total. In regard to live stock, the river traffic in cattle constituted 1 to 2 per cent in each of the five years in question, while for sheep the average was between 2 and 3 per cent, and for hogs the average was about 4 per cent of the total receipts from all sources. Statistics of the river trade at Cincinnati have been given by the Cincinnati Chamber of Commerce for a long series of years, extending back at least as far as 1845. These statistics show the river trade when it constituted practically all of the commercial movements to and from Cincinnati, except produce hauled in wagons and live stock driven on foot; and

they trace the development of railroad traffic, together with the relative and the absolute decline of transportation by river.

One of the principal items in the freight received at St. Louis by boat is apples, which are brought in large quantities from Calhoun County, Ill. This county, consisting of a long strip of land bounded on three sides by the Mississippi and Illinois Rivers, has no railroads and depends upon river boats for transportation. In 1911, 54 per cent of the barreled apples received at St. Louis came by river, and in 1912 the river receipts exceeded 49 per cent of the total receipts by all routes. Also, from 2 to 5 per cent of the eggs, from 4 to nearly 7 per cent of the cotton, from 1½ to 2 per cent of the sheep, and from 2½ to 3½ per cent of the hogs received at this city in 1908–1912 came by water.

Statistics of river trade at Memphis and New Orleans show relatively large receipts of cotton. At Memphis, during the five years ending with 1912, from 10 to nearly 14 per cent and at New Orleans from nearly 4 to more than 7 per cent of all cotton received was carried by boat.

MARKET VALUES OF PRODUCTS TRANSPORTED BY WATER.

Another basis of estimating the importance of steamboat traffic is the market value of products carried. The following approximate valuations are based upon average market prices at the respective cities where the produce was received, and are to be regarded merely as rough estimates. The wheat received by boat at Baltimore during the five years ending with 1912, at average prices of southern wheat, contract grade, was worth from $600,000 to $2,000,000 a year, and the corn receipts ranged from about $200,000 to $1,000,000, according to the prices paid for southern white corn.

At Cincinnati the receipts of tobacco by river averaged from $1,500,000 to more than $3,000,000 a year in 1908–1912; the cattle, hogs, and sheep were worth, at average prices, about $750,000 to $1,250,000 per year, while the eggs brought in by boat averaged $150,000 to $250,000.

Among the receipts at St. Louis during 1908–1912 whose value illustrates the importance of river traffic are apples, with an average annual value (disregarding the abnormally low receipts of apples in 1910) of about $125,000 to $775,000; eggs, worth $150,000 to $200,000 a year; cattle, sheep, and hogs, $1,500,000 to $2,000,000; and wheat, $200,000 to $500,000.

The annual receipts of cotton by river averaged $5,000,000 to $7,500,000 at Memphis and $3,000,000 to $7,000,000 at New Orleans in the five years just mentioned. Large quantities of other farm products were also received by river at these two cities.

SOME ADVANTAGES OF RAIL OVER RIVER.

While steamboat transportation is generally regarded as cheaper than rail, in practice the boats are at considerable disadvantage in some respects. A railroad car is free to move between any two railroad stations, while the steamboat is naturally limited to those places which it can reach. At terminals a car can be placed in any one of a number of advantageous positions. A car of wheat can be run into a grain elevator and unloaded over a grating, through which the grain is received by the elevating machinery and carried to the bins. A railroad car also may be placed alongside any one of a number of warehouses, to receive or discharge its load across a few feet of space; and it may be held for a day or so, if not longer, awaiting a convenient time for consignor to load or for consignee to unload. In regard to rates, as will be shown later, the steamboats do not always quote lower rates than are quoted by railroads.

SOME ADVANTAGES OF RIVER OVER RAIL.

Since the river is a public highway, there is an opportunity for competition among carriers which does not exist with rail traffic. In railroad business the roadway and terminals are regularly under the same management as the trains which use them, so that competition between two or more carriers over a single railroad is not to be expected. The fact that the river is a public highway makes it possible for persons of small capital to engage in transportation. Consequently sail vessels, gasoline launches, and small steamboats compete with larger boats for the traffic on many inland waterways. Sweet potatoes, watermelons, grain, and other commodities are brought into Washington and Baltimore from points from 100 to 200 miles distant by means of sail vessels and power boats. A considerable part of the produce sold at New Orleans is brought there by small boats, and on the river system opening into San Francisco Bay gasoline launches, sailboats, and other small vessels also share with the regular steamboat lines in the carrying trade. The opportunity offered to persons or companies of small capital to engage in transportation is one of the advantages of river over rail. These public waterways are used also by farmers to transport their own produce to market.

Another advantage of the river is the economy possible in a large part of the traffic, especially where relatively nonperishable articles are carried. The capacity of a boat can be increased or diminished greatly by attaching or detaching barges, so that a large load can be moved at a relatively low cost. In a large part of its business a boat can work much more cheaply than a railroad.

Frequently river transportation is quicker than rail. A consignment once loaded on a boat goes direct to its destination without being subject to delays occasioned by transfer from one carrier to

another or from the switching of cars. This applies, of course, only to shipments between points reached by the same boat and is true more for less-than-car-lot than for car-lot shipments. A carload carried by rail necessarily moves to its destination much more promptly than a small lot, which may have to be transferred from car to car in transit and possibly held for some days at various transfer points. The small lot moves as rapidly as the large one when shipped by boat, and, while the freight rate by boat is often lower for the large shipment than for the small, the difference between the two rates is usually not so great as it is in railroad traffic.

TERMINALS AND LANDINGS.

One striking difference between river traffic along the Atlantic slope and that in the Mississippi Valley is the different kinds of landings. On the tidal waterways of the Atlantic slope conditions require wharves to be built to enable boats to land and freight to be handled. This requirement naturally limits the landings to such places as regularly have traffic enough to justify the expense of building such a wharf. In the Mississippi Valley wharves are not only unnecessary for purposes of landing but are practically impossible to locate properly. The boat makes a landing by simply running alongshore and letting down the outer end of the landing stage, so that any part of a river bank which has no unusual obstruction may be taken as a landing. The great difference between the highest water level and the lowest and the uncertainty of the rise and fall of the river make it practically impossible to use fixed wharves at the river landings of the Mississippi Valley. However, wharf boats are established at principal landings and serve the purpose of a fixed wharf; and, since they rise and fall with the water level, they are in the right position to receive a steamboat alongside at any stage of the river.

The conditions which enable steamboats to stop at almost any unobstructed part of the bank make it possible for many farms on navigable rivers like those of the Mississippi Valley to have their own landings. On some rivers the landings actually used by steamboats are scarcely a mile apart, so that the entire country within hauling distance of the river has a large number of shipping points from which to select.

Convenient means of transfer between boat and rail are arranged at some terminals and at some intermediate landings as well. Railroad tracks, in some cases, are laid convenient to the steamboat landings and mechanical devices are used to facilitate transfer of freight from one carrier to another. There are many instances, of course, wherein improvement in transfer facilities is much needed, where the railroad tracks are inconveniently distant from the steamboat landing, and where few or no mechanical devices, other than

hand trucks, are used to facilitate handling of freight. In fact, most of the freight handled by rail or water is loaded and unloaded by means of hand trucks. Motor trucks for unloading or loading are found only in rare instances, but devices for assisting hand trucks up or down inclines and for moving heavier weights from one level to another are frequently used. At Riverton, Ala., an incline was built on the bank of the Tennessee River for the operation of a car by means of a steam-driven cable. This elevator transferred freight between the boats on the river and the railroad freight station up on the cliff. At any stage of the river this incline, of course, could be used, since it extended from the freight shed at the top of the high river bank to the lowest water level.

TYPICAL STEAMBOAT ROUTES.

ATLANTIC COAST.

The actual routes followed by steamboat lines in various parts of the United States have certain characteristics which differ according to location. The Hudson River has a variety of traffic. One class consists in the through service between New York City and Albany; another class of traffic is composed of numerous routes centering at various important cities along the way; and the canal-boat traffic on the way from the Erie Canal to tidewater, the boats being towed in groups each by a single tug. Among the farm products carried on this important waterway are grain, hay, fruit, and vegetables. Large quantities of wheat and corn are carried in canal boats on this river down to New York Harbor, the grain having been loaded at Buffalo.

Another important system of waterways is that of Chesapeake Bay and its tributaries. Traffic on this bay radiates from the principal cities—Baltimore, Washington, and Norfolk. The usual local steamboat trip from Baltimore begins late in the afternoon, the boat reaching the mouth of some river early the following morning, possibly some hours before daybreak. Here the first landing is made, which is followed by other landings up to the head of navigation. After a few hours at the terminus the boat starts on its return trip, often reaching the mouth of the river and entering Chesapeake Bay by nightfall and arriving at Baltimore early the next morning. This applies to a route of average length and of average distance from Baltimore. Some of the longer routes require 40 or more hours for transit one way, and on some of the shorter ones the round trip is made within a day. A great variety of produce is carried on these Chesapeake Bay routes. Grain, hay, and many kinds of fruits and vegetables constitute a large amount of traffic. From the lower part of the eastern shore of the bay sweet potatoes are shipped in such large quantities in the fall that they often make practically full

cargoes for the steamboats. Among other farm products received by water at Baltimore are tobacco from Patuxent River landings, live stock from the upper Rappahannock, and poultry and eggs from practically all the river routes.

Through service between Baltimore and Norfolk, Baltimore and Philadelphia, Norfolk and Washington, and between Norfolk and Richmond is maintained throughout the year by regular lines of boats. Over each of these routes the trip is made in a single night and the schedules are maintained as regularly as on railroads.

An important feature of Chesapeake Bay trade, as of some other waterways, is the large number of small craft, such as sail vessels, power boats, and small gasoline launches, which serve as common carriers on these waters. Early in July Baltimore Harbor swarms with such vessels bringing in the first of the wheat crop from the lower bay. They also carry a considerable amount of canned goods, watermelons, sweet potatoes, and other agricultural products. Their traffic in oysters, fish, lumber, railroad ties, and firewood is important also.

South of Virginia the Atlantic plain becomes wider and the navigable rivers extend farther inland, thus affording a wider reach from the coast for steamboat traffic than is afforded farther north. Steamboat traffic here begins to differ somewhat from the traffic on tidal waters and shows some points of resemblance to that of the Mississippi Valley. The long route from Baltimore to Fredericksburg, 285 miles, is not directly inland, but extends more than halfway parallel to the coast, the Rappahannock River itself measuring but 106 miles from its mouth to Fredericksburg; but from Savannah to Augusta the 202-mile route extends inland, as does the 370-mile route from Brunswick up the Altamaha and Ocmulgee Rivers to Macon.

Two isolated routes in the Atlantic coast region are worthy of mention. Lakes Champlain and George afford a highway for local traffic along part of the borders of Vermont and New York; and at the southern part of the Atlantic slope the Kissimmee River, with Lakes Kissimmee and Tohopekaliga, afford a steamboat route between the town Kissimmee and Fort Bassenger.

Numerous other routes are followed by steamboats on the inland waterways of the Atlantic coast and are mostly characterized by regularity of service and by lack of hindrances to navigation, except on the northern waterways in winter.

MISSISSIPPI VALLEY, INCLUDING GULF COAST.

The principal steamboat routes of the Mississippi Valley and Gulf coast may be grouped according to some central river port, as Cincinnati, St. Louis, Memphis, Vicksburg, New Orleans, or Mobile. From Cincinnati regular lines of boats extend up the Ohio River as

far as Pittsburgh and down the Ohio and Mississippi to Memphis; up the Ohio and Great Kanawha to Charleston, W. Va.; and an important line plies nightly between Cincinnati and Louisville. In addition to these, a number of other lines give regular service at Cincinnati. The longest route followed regularly from Cincinnati is the one to Memphis, 749 miles away. From Cincinnati to Pittsburgh the distance is 470 miles; from Cincinnati to Charleston, 263; and from Cincinnati to Louisville the distance is 128 miles.

From St. Louis regular lines reach to St. Paul on the upper Mississippi and to Memphis on the lower; and extend also up the Missouri River to Kansas City, up the Illinois to Peoria, and on the Mississippi, Ohio, and Tennessee Rivers to Waterloo, Ala.

Steamboat lines from Memphis reach points as far down the Mississippi River as Vicksburg, the up-river boats, as has been said, running from Memphis as far as St. Louis on the one hand and Cincinnati on the other.

Another important steamboat center in the Mississippi Valley is New Orleans. From this port steamboats serve landings as far up the Mississippi River as Vicksburg, and at least one line of boats follows the Mississippi, Red, and Black Rivers up to Harrisonburg, La.

Various other routes are followed through the network of rivers, bayous, and canals in the traffic between New Orleans and numerous towns and landings in southern Louisiana as far west as Bayou Teche and as far north as Red River. The variation in distances traveled by steamboats between New Orleans and St. Martinville on Bayou Teche illustrates the intricacies of the bayou routes. The trip by way of the Mississippi River and the Plaquemine waterways is 257 miles. By way of Harveys Canal, Bayou Barataria, Lake Salvador, Harang Canal, Bayou Lafourche, a private canal, Bayou Terrebonne, Barrows Canal, Bayous Black, Chene, and Boeuf, Berwick Bay, and Bayou Teche, the steamboat route is 192 miles; and by still another but shorter series of waterways the distance is reduced to 178 miles between New Orleans and St. Martinville.

Another group of steamboat routes from New Orleans consists of those reaching points on Lake Ponchartrain.

Of the many products carried on these various groups of steamboat routes from New Orleans, cotton may be taken as the typical commodity carried on the routes extending northward, sugar on the routes of the bayou region, and fruit and vegetables on Lake Ponchartrain.

Of the Gulf slope, as distinct from the Mississippi Valley proper, Mobile is one of the principal river ports. From this city steamboat lines extend up the Mobile, Alabama, and Tombigbee Rivers to Montgomery, Selma, Demopolis, and minor landings. Cotton is one of the most important agricultural products carried on these waterways.

The old route from New Orleans to St. Louis on the one hand, or to Cincinnati on the other, is no longer followed by any one line of boats. From the pioneer days of steamboating until a few decades after the Civil War, New Orleans was reached by lines terminating at St. Louis and Cincinnati, but with the development of railroads and improvement of their service steamboat traffic gradually changed in its nature, so that the bulk of the freight movement became local, and long-distance shipments grew less and less important. With the passing of the Anchor Line in the early nineties, St. Louis ceased to be connected with the city of New Orleans by any direct line of packets, and about 10 years later through freight service also ceased when the line of barges and towboats operated by the Mississippi Valley Transportation Co. went out of business. The through traffic consisting of large tows of coal barges, taken from Pittsburgh down to New Orleans, is not to be classed with regular steamboat-line service, which is conducted according to fixed schedules of arrivals and departures.

PACIFIC COAST.

One important system of waterways on the Pacific coast consists of the rivers emptying into San Francisco Bay; the Sacramento from the north and the San Joaquin from the south. The delta near the junction of these two rivers affords a number of channels which are used by various boats and which afford transportation to a rich truck region not conveniently reached by rail. The principal centers of steamboat traffic here are San Francisco, Sacramento, and Stockton. Each of these cities is connected with the other two and with numerous landings by regular lines of boats. Here, as well as on the Atlantic coast, sail vessels (especially on the lower river) and gasoline launches share in transportation. Here, also, barges are used to increase the capacity of steamboats in handling the large amount of business on this inland water system. One characteristic of this traffic is the large quantity of potatoes, beans, asparagus, and other vegetables. Their tonnage is great enough to give a distinctive character to the commerce, although grain, hay, and other products are carried in considerable quantities. Another important item in the river trade is milk shipped to the cities of San Francisco, Sacramento, and Stockton.

A second important system of waterways consists of the Columbia River and its tributaries. On the lower section of the river steamboats from Portland, on the Willamette a few miles from the Columbia, run down the Columbia to Astoria and others run up the river as far as Celilo Falls. Other routes extend from just above the falls to various points on the upper Columbia and Snake Rivers. On the upper Columbia one line connects Wenatchee with Bridgeport.

LOCAL TRAFFIC.

The steamboat routes thus described illustrate the fact that river traffic is generally local. A few hundred miles is usually the maximum length of the route of any one line of steamboats. In fact, it may be said that a run of 400 miles or more is exceptional. Of the 92 routes specified in Table 4, only 16 are more than 250 miles in length, which is slightly more than the average length of haul for all freight carried on railroads in the United States. In other words, steamboat traffic is distinctly short-haul traffic. The business of the boats in general is to concentrate at important centers freight picked up at local landings and to distribute to those landings commodities shipped from the trade centers. Again, it is to be noted that this applies to the river trade in general and not to such movements as the barge traffic in coal from the Pittsburgh region.

CHARACTERISTICS OF STEAMBOAT FREIGHT RATES.

There is a great variety of freight tariffs for steamboat river trade. The unit of quantity in some cases is 100 pounds or the short ton, and in others the package. Some boats quote rates for carlots lower than for less than carlots, as is done in railroad freight tariffs. Specific conditions give rise in many cases to specific rates. A certain commodity may be carried in one direction for a lower rate than in another, if the trade in the favored direction is large enough to justify special concessions in order to obtain it. Distance frequently has little or no influence upon the rate charged by boat. Sometimes over an entire route the same rate will be charged between any two landings regardless of distance.

The minimum charge for a single shipment by water is by no means uniform throughout the country. In Louisiana the minimum charge for a single package is 10 cents and for a single shipment is 25 cents, but if the boat has to make a special landing for a single shipment the charge is at least 50 cents. The steamboat tariff authorized by the State of Alabama specifies a minimum charge of 15 cents on a single shipment.

An example of the variety of packages taken as bases for steamboat freight rates is afforded in the Potomac River trade, between landings down the river and Washington. Rates on apples are as follows: 30 cents per sugar barrel, 25 cents per flour barrel, 15 cents per half-barrel basket, 12 cents per bushel basket, 10 cents per box, 15 cents per bag, and 13 cents per small carrier; also 15 cents per two-basket carrier, and 8 cents per basket of five-eighths of a bushel.

ILLUSTRATIONS AFFORDED BY THE NORFOLK TRADE.

A large amount of freight is carried between Baltimore and Norfolk by bay steamers. This traffic, except where commodity rates apply, is subject to the Southern Classification, which ranges from 10 cents per 100 pounds for class 6 to 26 cents for class 1, and from 10 cents

per 100 pounds for class A to 16 cents for class B and class H. An important group of commodities carried over this route consists of fresh fruits and vegetables. Some of the freight rates applying to these products are of considerable importance to the fruit and truck industry of the Norfolk region. The following rates applied in 1912 to shipments from Norfolk to Baltimore: Berries were charged from 18 cents per crate of 24 quarts to 42 cents per 60-quart crate; fresh fruits, 7 cents per bushel box, 11 cents per half-barrel box or carrier, 20 cents per standard vegetable barrel, and 25 cents per sugar barrel; cabbage, cucumbers, and spinach, 15 cents per flour barrel and 20 cents per sugar barrel; lettuce and potatoes, 20 cents per flour barrel and 23 cents per sugar barrel; tomatoes, 11 cents per half-barrel carrier; and watermelons, 2½ cents each. The charge on cotton in square bales was 40 cents per bale if compressed, and 50 cents if not compressed. Cotton in cylindrical bales was charged at the rate of 10 cents per 100 pounds.

FREIGHT TARIFF ZONES.

An example of the application of what may be termed "zone rates" is afforded by the tariffs established by the Railroad Commission of Alabama for the Alabama and Tombigbee Rivers. Freight tariff No. 3 of this series applies to shipments between Mobile and three principal cities up the river—Demopolis, Montgomery, and Selma. This tariff is based chiefly upon the Southern Classification. Cotton and cement are given special rates, but other articles are charged according to their respective "classification." The six numbered classes are charged from 30 cents per 100 pounds for articles in class 1 to 10 cents per 100 pounds for those in class 6, and the lettered classes 9 cents per 100 pounds for articles in class A to 19 cents per 100 pounds for those in class H. Articles coming under class F are charged 20 cents per barrel. The rates just quoted apply to shipments between Mobile and any of the three cities mentioned. Freight tariff No. 2 applies to shipments between Mobile, Demopolis, and points located between those cities. This schedule of rates is chiefly a "commodity" tariff, each article being given a special rate. For landings in general on the Alabama and Tombigbee Rivers and their tributaries tariff No. 1, also a "commodity" tariff, applies.

Another instance of a zone system of freight rates is that afforded on the route between Evansville, Ind., and Bowling Green, Ky., including parts of the Ohio, Green, and Big Barren Rivers. There is a special tariff between Evansville and Bowling Green. Other landings are divided into four groups, according to their distance from Evansville, No. 1 being the nearest to that place. The freight rate from all landings on the Tennessee River between Florence, Ala., and its mouth, to and from St. Louis, is the same for a given commodity. It costs as much to ship from St. Louis to any one landing in this territory as to another.

BLANKET RATES.

An example of a "blanket" or "postage-stamp" rate—that is, the same charge for a given commodity between any two landings—is afforded by the traffic on the Apalachicola River and its tributaries. Also the tariff for river boats, issued under the authority of the Railroad Commission of Louisiana, No. 8467–S, applies to traffic between any two landings from New Orleans up to Devalls Landing. A large number of commodities are separately rated. For those not included in the commodity rates the Western Classification as used by railroads applies. The numbered classes, which apply to less-than-carload shipments, are charged from 15 cents for class 5 to 30 cents per 100 pounds for class 1; and the lettered classes, which apply to carload shipments, are charged from 8 cents for class E to 15 cents per 100 pounds for class A.

UNIFORM BASIS OF COMPARISON.

Detailed information as to freight rates and distances are shown in Table 2. The original quotations of freight rates when expressed in other units were reduced to cents per 100 pounds in order to facilitate comparison. The column in Table 2 giving the rates per ton per mile has been computed in order to compare short-distance with long-distance shipments on a uniform basis. While in practice distance frequently has but little to do with cost over a single route, nevertheless it is logical to use length of haul as a factor in comparing the cost of various services of transportation. While it may not cost the shipper more to send his product 50 miles than to send it 10, the cost to the carrier is greater for the 50 miles and consequently, from the carrier's point of view, the service rendered is greater. Therefore, in comparing one cost with another, and taking into account service rendered, the ton-mile rate may be used to advantage. However, care should be taken in comparing the ton-mile rate between two points over one route with the corresponding rate between the same points over a longer or shorter route. Here the actual service rendered to the owner of the freight is not necessarily greater or less over the longer route than the short one.

GROUPS OF WATERWAYS.

Water routes are divided in Table 2 into three classes or groups: The Atlantic slope, the Mississippi Valley, including the Gulf slope, and the Pacific slope. Under each group the quotations and routes are arranged in order of distance, beginning with the shortest. Since the data in Table 2 are not comprehensive enough for satisfactory averages to be made from them, no such averages are shown here. The data are, however, complete enough to illustrate costs of transportation over long, medium, and short steamboat routes.

RAIL AND WATER RATE COMPARED.

Some important routes and commodities are selected for comparing rail and water rates in Table 3. Between Hartford, Conn., and New York City the rates on apples, eggs, hay, and potatoes, as well as other commodities, are the same by rail as by water; that is, the rates paid by the shippers. Reduced to cents per short ton per mile, the rate by water appears much less, since the distance by water is 52 miles greater than by rail.

Between Cincinnati and Pittsburgh the actual as well as the ton-mile rates are much lower by water than by rail on the commodities represented in Table 3. These are not exceptions; lower rates by water than by rail are general over this route. However, between Charleston, W. Va., and Cincinnati the steamboat charge per package, when reduced to an equivalent cents per 100 pounds, indicates higher rates for apples and eggs by boat than by rail. The rate on hay, however, by boat over this route is 12½ cents per 100 pounds for either small or large lots, while by rail 22 cents is charged for less than carloads and 12 cents per 100 pounds for carloads. For potatoes the boat charges per package is equivalent to 13 cents per 100 pounds, while the railroad charges 15 cents for less-than-carload lots and 12 cents per 100 pounds for car lots. The steamboat rate applies to any quantity. Between Cincinnati and Memphis and between Memphis and St. Louis the boats quote higher rates than the railroad for eggs, when the boat rates are reduced from cents per package to cents per 100 pounds. In practically all other rates shown in Table 3 between Memphis and the two cities just named the charge by water is less than by rail.

DISTANCE AND TIME OF TRANSIT.

It is convenient to express the average rate of transit in miles per hour, but it should be distinctly understood that this rate should be applied to a number of hours—say, 12 or 24—in order to make a satisfactory application for practical purposes. The rate itself has been computed by dividing the total number of hours in transit into the total miles run, and includes all stops at landings. Thus, if an average rate is given as 4 miles per hour, it means that a day's run of a vessel, say, of 12 hours, will cover 48 miles; or, if the rate is only 2 miles per hour, the day's run will cover possibly 24 miles; or, with 24 hours for the unit, a local boat making various landings and averaging 3 miles per hour will cover a distance of 72 miles in the 24 hours. It will be noted that the average rate of transit is subject to wide variations, some as low as 2 miles per hour and some reaching 15. This is governed partly by the speed of the boat while under way, but largely by the number of landings made in transit.

NUMBER OF LANDINGS.

To illustrate the influence of the number of landings on the average rate of speed, Table 5 has been compiled. Between Cincinnati and Memphis 346 landings are reported over a distance of 749 miles, making an average of about 2 miles between landings. Between St. Louis and Memphis 318 landings are reported for 415 miles. Of the six routes in Table 5 illustrating Mississippi Valley conditions, the average distance between landings ranges from 1.30 miles to 3.31 miles.

From Baltimore, Md., to Fredericksburg, Va., a distance of 285 miles, 34 landings are reported. These are all on the Rappahannock River, extending along a distance of 106 miles, there being an average of 3.12 miles between landings. From Hartford, Conn., to New York City there are 12 intermediate landings for a certain line of steamers, which 12 landings are all on the Connecticut River, and their average distance apart is 4.33 miles. One of the fastest rates of transit on inland water routes is between Baltimore and Norfolk, a distance of 184 miles with but one intermediate stop.

SUMMARY OF RATES OF TRANSIT.

In Table 4 there are 102 routes for which rates of transit are given. Of these, 15 show an average rate of less than 4 miles an hour, 22 average 4 miles to less than 6, 19 routes have an average of 6 to less than 8, and 21 routes an average of 8 and less than 10 miles per hour, making 62 out of 102 showing from 4 to less than 10 miles per hour; 25 rates of speed were 10 miles and over, 15 of them from 10 to less than 12 miles, and 10 rates were 12 miles and over. Of the 50 instances reported for the Mississippi Valley, including the Gulf slope, 29 were rates of 4 to less than 8 miles per hour, 12 rates were less than 4 miles, and 9 were 8 miles and over per hour. On the Atlantic slope 32 out of 43 rates were at least 8 miles per hour and 11 rates were less than 8 miles per hour. The nine reports from the Pacific slope showed five instances of 8 to less than 12 miles per hour and four instances of 4 to less than 8 miles per hour.

FREIGHT RATES AND FARM PRICES.

A practical use of the data compiled in this bulletin is to compare freight rates with prices. This may be done here, for the sake of illustration and to indicate the method. For instance, the rate on apples over a certain 25-mile route in Maine was 15 cents per barrel in September and October, 1912. The average farm price for all apples in the State those months was $1.725 per barrel, making the freight rate 8.7 per cent, over this specific route, of the farm price in the whole State for all kinds. For a 24-mile route in New York, the freight rate happening to be 15 cents per barrel also,

made 10 per cent of the farm price for the State. In this case the average farm price of apples for New York State was $1.50 per barrel. While the prices mentioned do not necessarily apply to the actual commodities carried subject to these rates, both prices and rates are representative enough to give a fair measure of relationship. These percentages are as low as 6.67 for a 33-mile route in New York and as high as 34.25 per cent over a 239-mile route in the Pacific northwest. In cotton traffic, quotations of the freight rates by boat in a number of instances range from about 0.9 of 1 per cent of the farm price to slightly more than 3 per cent, most of the instances noted showing less than 2 per cent. Eggs are charged from one-half of 1 to as high as 10 per cent of their farm value for water transportation. Hay, owing to its large bulk as compared with price, is frequently charged from 10 to 40 per cent of its farm price for freight. Potatoes compare with apples in the percentage of the freight rate, as based upon the average farm price. For wheat, from 3 to 15 per cent of its farm value is equivalent to the freight rate. The average farm price meant here is the price received by the farmer for delivery to shipping point, and does not include freight charge.

TABLE 1.—*Receipts of various farm products by water compared with total receipts, at selected cities.*

[Sources: Baltimore Daily Produce Report, Cincinnati Chamber of Commerce, St. Louis Merchants' Exchange, Memphis Cotton Exchange, and New Orleans Cotton Exchange.]

City, product, and year.	Receipts.			City, product, and year.	Receipts.		
	Total quantity.	By river.			Total quantity.	By river.	
		Quantity.	Per cent of total.			Quantity.	Per cent of total.
Baltimore, Md.[1]				*Cincinnati, Ohio*—Continued.			
Corn (bushels):				Corn (bushels):			
1908	13,665,794	1,100,000	8.0	1908	7,763,457	5,976	0.1
1909	10,213,817	1,500,000	14.7	1909	7,145,408	5,682	.1
1910	10,428,779	400,000	3.8	1910	8,631,574	3,590	.04
1911	14,482,742	700,000	4.8	1911	9,367,710	4,678	.04
1912	13,197,593	400,000	3.0	1912	9,806,063	2,786	.02
Wheat (bushels):				Eggs (cases):			
1903	9,865,044	1,700,000	17.2	1903	441,072	27,456	6.2
1909	5,821,809	600,000	10.3	1909	519,652	26,340	5.1
1910	6,723,673	2,000,000	29.7	1910	511,519	32,840	6.4
1911	11,088,586	2,000,000	18.0	1911	605,131	33,367	5.5
1912	12,488,385	1,300,000	10.4	1912	668,942	31,072	4.6
Cincinnati, Ohio.				Hay (tons):			
Apples (barrels):				1903	156,151	1,692	1.1
1903	373,163	1,254	.3	1909	167,263	3,093	1.8
1909	240,587	7,174	3.0	1910	139,262	3,275	1.7
1910	521,814	31,036	5.9	1911	155,195	3,139	2.0
1911	293,204	7,057	2.4	1912	151,238	1,454	1.0
1912	378,524	45,849	12.1	Hogs (number):			
Cattle (number):				1903	1,278,522	48,142	3.8
1903	274,520	3,751	1.4	1909	951,522	41,034	4.3
1909	293,331	4,474	1.5	1910	838,850	35,227	4.2
1910	312,962	3,630	1.2	1911	1,135,121	45,585	4.0
1911	312,143	3,020	1.0	1912	1,224,949	49,367	4.0
1912	342,249	6,343	1.9				

[1] Receipts at Baltimore "by river" refer to receipts from landings in Chesapeake Bay and its tributaries.

TABLE 1.—*Receipts of various farm products by water compared with total receipts, at selected cities*—Continued.

City, product, and year.	Receipts.		
	Total quantity.	By river.	
		Quantity.	Per cent of total.
Cincinnati, Ohio—Continued.			
Potatoes (bushels):			
1903	2,472,724	36,717	1.5
1909	2,012,009	21,597	1.1
1910	2,394,621	60,839	2.5
1911	2,364,427	31,832	1.3
1912	2,428,562	31,407	1.3
Sheep (number):			
1903	485,278	13,033	2.7
1909	491,206	14,713	3.0
1910	508,715	18,632	3.7
1911	546,989	10,898	2.0
1912	500,386	12,236	2.4
Tobacco (cases and bales):			
1908	54,717	46	.1
1909	53,918	143	.3
1910	48,810	67	.1
1911	48,902	147	.3
1912	73,097	38	.1
Tobacco (hogsheads):			
1903	68,798	14,064	20.4
1909	64,013	6,742	10.5
1910	70,370	9,832	14.0
1911	82,122	15,129	18.4
1912	75,510	15,059	19.9
Wheat (bushels):			
1903	4,052,264	41,288	1.0
1909	4,178,771	34,603	.8
1910	3,776,828	19,714	.5
1911	3,946,681	26,003	.7
1912	3,235,605	8,440	.3
Wool (bales):			
1908	135,702	490	.4
1909	78,994	336	.4
1910	54,421	558	1.0
1911	52,713	444	.8
1912	127,783	1,083	.8
Memphis, Tenn.			
Cotton (bales):			
1908	750,442	102,195	13.6
1909	984,370	101,648	10.3
1910	785,485	91,324	11.6
1911	920,887	98,376	10.7
1912	969,670	107,827	11.1
New Orleans, La. (for years ending Aug. 31).			
Cotton (bales):			
1908	2,015,071	146,516	7.3
1909	2,107,956	77,896	3.7
1910	1,342,112	50,059	3.7
1911	1,629,308	60,894	3.7
1912	1,709,028	87,803	5.1
St. Louis, Mo.			
Apples (barrels):			
1908	306,192	37,580	12.3
1909	317,664	62,014	19.5
1910	248,615	60	.02
1911	411,808	222,563	54.0
1912	433,891	213,531	49.2
Apples (boxes):			
1908	97,295	35	.03
1909	70,350	182	.3
1910	135,730	45	.03
1911	104,995	2,062	2.0
1912	337,910	960	.3
Cattle (number):			
1908	1,293,564	11,671	.9
1909	1,418,005	9,320	.7
1910	1,356,232	6,552	.5
1911	1,206,423	8,073	.7
1912	1,298,295	8,422	.6
Cotton, for local use (bales):			
1908	128,452	7,562	5.9
1909	108,257	4,277	4.0
1910	78,786	3,100	3.9
1911	115,552	7,469	6.5
1912	101,389	4,140	4.1
Eggs, for local use (packages):			
1908	605,197	28,869	4.8
1909	443,591	23,929	5.4
1910	522,365	21,961	4.2
1911	807,509	22,485	2.8
1912	615,741	21,739	3.5
Hogs (number):			
1908	3,199,922	103,399	3.4
1909	3,076,065	83,369	2.7
1910	2,548,480	60,343	2.4
1911	3,634,851	98,044	2.7
1912	3,023,739	72,778	2.4
Sheep (number):			
1908	724,781	16,030	2.2
1909	835,973	16,446	2.0
1910	776,665	14,321	1.8
1911	1,024,402	15,037	1.5
1912	1,052,208	14,315	1.4
Wheat (bushels):			
1908	19,047,240	[1] 350,178	1.8
1909	21,372,726	[1] 373,040	1.7
1910	19,642,312	[1] 391,512	2.0
1911	17,025,604	[1] 393,018	2.3
1912	30,516,432	[1] 194,148	.6
Wool (pounds):			
1908	23,123,340	252,350	1.1
1909	22,649,110	35,600	.2
1910	21,044,440	211,320	1.0
1911	26,773,770	390,840	1.5
1912	23,390,150	317,510	1.4

[1] Reported in number of sacks; reduced to bushels by assuming 1 sack to average 2 bushels.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912.*

[Sources: Freight rates as reported by representatives of steamboats or steamboat lines; distances chiefly as furnished by Chief of Engineers, United States Army.]

APPLES.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Atlantic slope.		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Between—								
Newburgh and Wappinger Falls, N. Y.	Hudson River	12	10 per bbl	[1] 6.29	[1] 10.48			
Newburgh and Poughkeepsie, N. Y.	do	16	do	[1] 6.29	[1] 7.86			
Hartford and Middletown, Conn.	Connecticut River	20	9 per 100 lbs	9.00	9.00	6 per 100 lbs	6.00	6.00
Burlington, Vt., and Plattsburg, N. Y.	Lake Champlain	22	10 per 100 lbs	10.00	9.09	5 per 100 lbs	5.00	4.55
Gardiner and Bath, Me.	Kennebec River	24	15 per bbl	[1] 9.43	[1] 7.86			
Newburgh and Haverstraw, N. Y.	Hudson River	24	15 per bbl	[1] 9.43	[1] 7.86	10 per bbl	[1] 6.29	[1] 5.24
Albany and Catskill, N. Y.	do	33	10 per bbl	[1] 6.29	[1] 3.81			
Burlington and St. Albans Bay, Vt.	Lake Champlain	40	10 per 100 lbs	10.00	5.00	5 per 100 lbs	5.00	2.50
Hartford and East Haddam, Conn.	Connecticut River	41	10 per 100 lbs	10.00	4.88	7 per 100 lbs	7.00	3.41
Hartford and Lyme, Conn.	do	49	12 per 100 lbs	12.00	4.90	8 per 100 lbs	8.00	3.27
Newburgh and Troy, N. Y.	Hudson River	91	20 per bbl	[1] 12.58	[1] 2.77	7 per 100 lbs	7.00	1.54
New York and Saugerties, N. Y.	do	98	18 per bbl	[1] 11.32	[1] 2.31			
Hartford, Conn., and New York, N. Y.	Connecticut River and Long Island Sound.	162	16 per 100 lbs	16.00	1.98	11 per 100 lbs	11.00	1.36
Baltimore, Md., and Norfolk, Va.	Chesapeake Bay	184	20 per vegetable bbl.[2]	[1] 12.58	[1] 1.37			
Mississippi Valley, including Gulf slope.								
Between—								
Shawneetown and Cave in Rock, Ill.	Ohio River	25	15 per 100 lbs	15.00	12.00			
Charleston and Montgomery, W. Va.	Great Kanawha River	28	10 per bbl	[1] 6.29	[1] 4.49			
Cairo, Ill., and Paducah, Ky.	Ohio River	45	15 per bbl	[1] 9.43	[1] 4.19	10 per bbl	[1] 6.29	[1] 2.80
Alton and Hamburg, Ill.	Mississippi River	54	12 per bbl	[1] 7.55	[1] 2.80			
Shawneetown and Rosiclare, Ill.	Ohio River	76	15 per bbl	[1] 9.43	[1] 2.48			
St. Louis, Mo., and Hamburg, Ill.	Mississippi River	90	15 per bbl	[1] 9.43	[1] 2.10			
St. Louis and Louisiana, Mo.	do	107	10 per 100 lbs	10.00	1.87			
Cincinnati, Ohio, and Louisville, Ky.	Ohio River	128	15 per bbl	[1] 9.43	[1] 1.47			
Evansville, Ind., and Paducah, Ky.	do	137	20 per bbl	[1] 12.58	[1] 1.84			

[1] Assuming average gross weight of 1 barrel of apples to be 159 pounds.

[2] Northbound.

62705°—14——3

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

APPLES—Continued.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Mississippi Valley, including Gulf slope—Continued.								
Between—		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Evansville, Ind., and Louisville, Ky.	Ohio River	185	7 per 100 lbs	7.00	.76			
Evansville, Ind., and Bowling Green, Ky.	Ohio, Green, and Big Barren Rivers	190	25 per bbl	[1] 15.72	[1] 1.65			
Cincinnati, Ohio, and Parkersburg, W. Va.	Ohio River	200	20 per bbl	[1] 12.58	[1] 1.26			
St. Louis, Mo., and Peoria, Ill.	Mississippi and Illinois Rivers	200	25 per bbl	[1] 15.72	[1] 1.57	20 per bbl	[1] 12.58	[1] 1.26
Cincinnati, Ohio, and Charleston, W. Va.	Ohio and Great Kanawha Rivers	263	do	[1] 15.72	[1] 1.20			
Pittsburgh, Pa., and Charleston, W. Va.	do	325	30 per bbl	[1] 18.87	[1] 1.16	20 per bbl	[1] 12.58	[1] .77
St. Paul, Minn., and Davenport, Iowa	Mississippi River	378	18 per 100 lbs	18.00	.95			
St. Louis and Kansas City, Mo.	Mississippi and Missouri Rivers	407	28 per 100 lbs	28.00	1.38	22 per 100 lbs	22.00	1.08
St. Louis, Mo., and Memphis, Tenn.	Mississippi River	415	30 per bbl	[1] 18.87	[1] .91	20 per bbl	[1] 12.58	[1] .61
Cincinnati, Ohio, and Pittsburgh, Pa.	Ohio River	470	20 per bbl	[1] 12.58	[1] .54	15 per bbl	[1] 9.43	[1] .40
Pacific slope.								
Between—								
Kennewick and White Bluffs, Wash.	Columbia River	42	20 per 100 lbs	20.00	9.52			
Wenatchee and Bridgeport, Wash.	do	79	15 per 100 lbs	15.00	3.80			
Kennewick, Wash., and Portland, Oreg.	Columbia and Willamette Rivers	239	42 per 100 lbs	42.00	3.51	28 per 100 lbs	28.00	2.34

COTTON.

Atlantic slope.								
Between—								
Georgetown and Conway, S. C.	Waccamaw River	46	10 per 100 lbs	10.00	4.35			
Savannah, Ga., and Beaufort, S. C.	Savannah and Beaufort Rivers	60	do	10.00	3.33			
Georgetown and Cains Landing, S. C.	Peedee River	86	75 per bale	[2] 15.00	[2] 3.49			
Baltimore, Md. and Norfolk, Va.	Chesapeake Bay	184	50 per bale [3]	[2] 10.00	[2] 1.09			
Baltimore, Md., and West Point, Va.	Chesapeake Bay and York River	195	do	[2] 10.00	[2] 1.03			
Savannah and Augusta, Ga.	Savannah River	202	80 per bale	[2] 16.00	[2] 1.58			
Brunswick and Macon, Ga.	Altamaha and Ocmulgee Rivers	370	20 per 100 lbs	20.00	1.08	19 per 100 lbs	19.00	1.03

Mississippi Valley, including Gulf slope.								
Between—								
Shiloh, Tenn., and Riverton, Ala.	Tennessee River	34	20 per 100 lbs.[3]	20.00	11.76			
Memphis, Tenn., and White Hall, Ark.	Mississippi River	65	50 per bale	[2] 10.00	[2] 3.68			
Albany and Bainbridge, Ga.	Flint River	69	10 per 100 lbs	10.00	2.90			
Vicksburg and Natchez, Miss.	Mississippi River	100	75 per bale	[2] 15.00	[2] 3.00			
Memphis, Tenn., and Friar Point, Miss.	do	105	do	[2] 15.00	[2] 2.86			
Apalachicola, Fla., and Bainbridge, Ga.	Apalachicola and Flint Rivers	173	10 per 100 lbs	10.00	1.16			
Memphis, Tenn., and Arkansas City, Ark.	Mississippi River	209	100 per bale	[2] 20.00	[2] 1.91			
Shiloh, Tenn., and Paducah, Ky.	Tennessee River	227	20 per 100 lbs	20.00	1.76			
Mobile and Demopolis, Ala.	Mobile and Tombigbee Rivers	230	75 per bale	[2] 15.00	[2] 1.30			
Mobile and Selma, Ala.	Mobile and Alabama Rivers	308	do	[2] 15.00	[2] .97			
New Orleans and Harrisonburg, La.	Mississippi, Red, and Black Rivers	340	125 per bale	[2] 25.00	[2] 1.47			
Apalachicola, Fla., and Columbus, Ga.	Apalachicola and Chattahoochee Rivers	360	50 per bale	[2] 10.00	[2] .56			
Vicksburg, Miss., and Memphis, Tenn.	Mississippi River	370	90 per bale	[2] 18.00	[2] .97			
Memphis, Tenn., and St. Louis, Mo.	do	415	75 per bale	[2] 15.00	[2] .72			
New Orleans, La., and Carriola, Ark.	do	446	125 per bale	[2] 25.00	[2] 1.12			
Shiloh, Tenn., and St. Louis, Mo.	Tennessee, Ohio, and Mississippi Rivers.	477	35 per 100 lbs	35.00	1.47			
Memphis, Tenn., and Cincinnati, Ohio.	Mississippi and Ohio Rivers	749	100 per bale	[2] 20.00	[2] .53			

EGGS.

Atlantic slope.								
Between—								
Newburgh and Wappingers Falls, N. Y.	Hudson River	12	8 per case	[4] 15.09	[4] 25.15			
Philadelphia Pa., and Billingsport, N. J.	Delaware River	12	10 per case	[4] 18.87	[4] 31.45			
Albany and New Baltimore, N. Y.	Hudson River	15	do	[4] 18.87	[4] 25.16	8 per case	[4] 15.09	[4] 20.12
Newburgh and Poughkeepsie, N. Y.	do	16	do	[4] 18.87	[4] 23.59			
Philadelphia, Pa., and Bridgeport, N. J.	Delaware River	18	do	[4] 18.87	[4] 20.97			
Hartford and Middletown, Conn.	Connecticut River	20	11 per 100 lbs	11.00	11.00			
Burlington, Vt., and Plattsburg, N. Y.	Lake Champlain	22	8 per 100 lbs	8.00	7.27			
Gardiner and Bath, Me.	Kennebec River	24	25 per case	[4] 47.17	[4] 39.31			
Newburgh and Haverstraw, N. Y.	Hudson River	24	10 per case	[4] 18.87	[4] 15.72	8 per case	[4] 15.09	[4] 12.58
Jacksonville and Green Cove Springs, Fla.	St. Johns River	30	do	[4] 18.87	[4] 12.58			
Philadelphia, Pa., and Wilmington, Del.	Delaware River	31	10 per 100 lbs	10.00	6.45			
Albany and Catskill, N. Y.	Hudson River	33	10 per case	[4] 18.87	[4] 11.44			
Philadelphia, Pa., and Trenton, N. J.	Delaware River	36	9 per case	[4] 16.98	[4] 9.43	10 per 100 lbs.	10.00	5.56
Burlington and St. Albans Bay, Vt.	Lake Champlain	40	12 per 100 lbs	12.00	6.00			
Lake George and Baldwin, N. Y.	Lake George	40	18 per 100 lbs	18.00	9.00			
Hartford and East Haddam, Conn.	Connecticut River	41	12 per 100 lbs	12.00	5.85			
Philadelphia, Pa., and Salem, N. J.	Delaware River	45	10 per case	[4] 18.87	[4] 8.39			
Philadelphia, Pa., and Delaware City, Del.	do	45	16 per 100 lbs	16.00	7.11			
Georgetown and Conway, S. C.	Waccamaw River	46	41 per 100 lbs	41.00	17.83			

[1] Assuming average gross weight of 1 barrel of apples to be 159 pounds.
[2] Assuming average gross weight of 1 bale of cotton to be 500 pounds.
[3] Uncompressed only.
[4] Assuming average gross weight of 1 case of eggs (30 dozen) to be 53 pounds.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

EGGS—Continued.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Atlantic slope—Continued.								
Between—		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Hartford and Lyme, Conn.	Connecticut River	49	14 per 100 lbs.	14.00	5.71			
Savannah, Ga., and Beaufort, S. C.	Savannah and Beaufort Rivers	60	15 per 100 lbs.	15.00	5.00			
Georgetown and Cains Landing, S. C.	Peedee River	86	25 per case	[1] 47.17	[1] 10.97			
Philadelphia, Pa., and Frederica, Del.	Delaware River and Murder Kill Creek	90	15 per case	[1] 28.30	[1] 6.29			
Newburgh and Troy, N. Y.	Hudson River	91	10 per case	[1] 18.87	[1] 4.15			
New York and Saugerties, N. Y.	do	98	15 per case	[1] 28.30	[1] 5.78			
Norfolk and Richmond, Va.	Elizabeth and James Rivers	116	22 per 100 lbs.	22.00	3.79			
Philadelphia, Pa., and Baltimore, Md.	Delaware River, canal, and Chesapeake Bay.	120	19 per 100 lbs.	19.00	3.17			
Baltimore and Salisbury, Md.	Chesapeake Bay and Wicomico River	142	25 per case	[1] 47.17	[1] 6.64			
Baltimore and Bristol, Md.	Chesapeake Bay and Patuxent River	150	30 per case	[1] 56.60	[1] 7.55			
Baltimore, Md., and Seaford, Del.	Chesapeake Bay and Nanticoke River	160	25 per case	[1] 47.17	[1] 5.90			
Hartford, Conn., and New York, N. Y.	Connecticut River and Long Island Sound.	162	19 per 100 lbs.	19.00	2.35			
Baltimore, Md., and Norfolk, Va.	Chesapeake Bay	184	22 per 100 lbs.	22.00	2.39			
Baltimore, Md., and West Point, Va.	Chesapeake Bay and York River	195	22 per 100 lbs.	22.00	2.26			
Savannah and Augusta, Ga.	Savannah River	202	30 per case	[1] 56.60	[1] 5.60			
Baltimore, Md., and Tappahannock, Va	Chesapeake Bay and Rappahannock River.	225	30 per case	[1] 56.60	[1] 5.03			
Baltimore, Md., and Fredericksburg, Va	do	285	30 per case	[1] 56.60	[1] 3.97			
Brunswick and Macon, Ga.	Altamaha and Ocmulgee Rivers	370	40 per 100 lbs.	40.00	2.16	31 per 100 lbs.	31.00	1.68
Mississippi Valley, including Gulf slope.								
Between—								
Shawneetown and Cave in Rock, Ill.	Ohio River	25	15 per 100 lbs.	15.00	12.00			
Charleston and Montgomery, W. Va.	Great Kanawha River	28	10 per case	[1] 18.87	[1] 13.48			
Cairo, Ill., and Paducah, Ky.	Ohio River	45	15 per case	[1] 28.30	[1] 12.58	10 per case	[1] 18.87	[1] 8.39
Lake Charles and Cameron, La.	Calcasieu River and Lake	53	{2 per dozen[2]	[1] 113.21	[1] 42.72	1 per dozen	[1] 56.60	[1] 21.36
			{1 per dozen[2]	[1] 56.60	[1] 21.36			
Charleston, W. Va., and Gallipolis, Ohio.	Great Kanawha and Ohio Rivers	62	12½ per case	[1] 23.58	[1] 7.61	10 per case	[1] 18.87	[1] 6.09
Memphis, Tenn., and White Hall, Ark.	Mississippi River	65	30 per case	[1] 56.60	[1] 17.42			

Albany and Bainbridge, Ga.	Flint River	69	1 per dozen	[1] 56.60	[1] 16.41			
New Orleans and Donaldsonville, La.	Mississippi River	79	30 per case	[1] 53.00	[1] 14.33			
St. Louis, Mo., and Rip Rap, Ill.	do	90	15 per case	[1] 28.30	[1] 6.29			
Vicksburg and Natchez, Miss.	do	100	30 per case	[1] 56.60	[1] 11.32			
Chattanooga and Kingston, Tenn.	Tennessee River	104	25 per case	[1] 47.17	[1] 9.07			
Memphis, Tenn., and Friar Point, Miss.	Mississippi River	105	1 per dozen	[1] 56.60	[1] 10.78			
St. Louis and Louisiana, Mo.	do	107	12½ per case	[1] 23.58	[1] 4.41			
Cincinnati, Ohio, and Louisville, Ky.	Ohio River	128	15 per case	[1] 28.30	[1] 4.42			
Evansville, Ind., and Paducah, Ky.	do	137	do	[1] 28.30	[1] 4.13			
Paducah, Ky., and Britts Landing, Tenn.	Tennessee River	138	¾ per dozen	[1] 42.45	[1] 6.15	½ per dozen	[1] 28.30	[1] 4.10
Bismarck and Williston, N. Dak.	Missouri River	150	15 per 100 lbs.	15.00	2.00			
Chattanooga, Tenn., and Decatur, Ala.	Tennessee River	160	25 per case	[1] 47.17	[1] 5.90			
Apalachicola, Fla., and Bainbridge, Ga.	Apalachicola and Flint Rivers	173	1 per dozen	[1] 56.60	[1] 6.54			
New Orleans and Bayou Teche landings, La.	Mississippi River, Bayou Teche, and connecting waterways.	[3] 175	do	[1] 56.60	[1] 6.47			
Evansville, Ind., and Louisville, Ky.	Ohio River	185	22 per 100 lbs.	22.00	2.38			
Evansville, Ind., and Bowling Green, Ky.	Ohio, Green, and Big Barren Rivers	190	40 per case	[1] 75.47	[1] 7.94	20 per case	[1] 37.74	[1] 3.77
Cincinnati, Ohio, and Parkersburg, W. Va.	Ohio River	200	15 per case	[1] 28.30	[1] 2.83			
St. Louis, Mo., and Peoria, Ill.	Mississippi and Illinois Rivers	200	25 per case	[1] 47.17	[1] 4.72	20 per case	[1] 37.74	[1] 3.77
Memphis, Tenn., and Arkansas City, Ark.	Mississippi River	209	do	[1] 47.17	[1] 4.51	15 per case	[1] 28.30	[1] 2.71
Mobile and Demopolis, Ala.	Mobile and Tombigbee Rivers	230	35 per case	[1] 66.04	[1] 5.74			
Memphis, Tenn., and Cairo, Ill.	Mississippi River	254	1 per dozen	[1] 56.60	[1] 4.46			
Cincinnati, Ohio, and Charleston, W. Va	Ohio and Great Kanawha Rivers	263	20 per case	[1] 37.74	[1] 2.87			
Mobile and Selma, Ala.	Mobile and Alabama Rivers	308	25 per 100 lbs.	25.00	1.62			
Charleston, W. Va., and Pittsburgh, Pa.	Great Kanawha and Ohio Rivers	325	12½ per case	[1] 23.58	[1] 1.45			
New Orleans and Harrisonburg, La.	Mississippi, Red, and Black Rivers	340	1 per dozen	[1] 56.60	[1] 3.33			
Apalachicola, Fla., and Columbus, Ga.	Apalachicola and Chattahoochee Rivers	350	do	[1] 56.60	[1] 3.14			
Vicksburg, Miss., and Memphis, Tenn.	Mississippi River	370	do	[1] 56.60	[1] 3.06			
St. Paul, Minn., and Davenport, Iowa.	do	378	18 per 100 lbs.	18.00	.95			
St. Louis and Kansas City, Mo.	Mississippi and Missouri Rivers	407	36 per 100 lbs.	36.00	1.77	28 per 100 lbs.	28.00	1.38
St. Louis, Mo., and Memphis, Tenn.	Mississippi River	415	35 per case	[1] 66.04	[1] 3.18			
New Orleans, La., and Carriola, Ark.	do	446	30 per case	[1] 56.60	[1] 2.54			
St. Louis, Mo., and Savannah, Tenn.	Mississippi, Ohio, and Tennessee Rivers	469	1 per dozen	[1] 56.60	[1] 2.41			
Cincinnati, Ohio, and Pittsburgh, Pa.	Ohio River	470	15 per case	[1] 28.30	[1] 1.20			
Cincinnati, Ohio, and Memphis, Tenn.	Ohio and Mississippi Rivers	743	40 per case	[1] 75.47	[1] 2.02			
Pacific slope.								
Between—								
Kennewick and White Bluffs, Wash.	Columbia River	42	20 per 100 lbs.	20.00	9.52			
Wenatchee and Bridgeport, Wash.	do	79	50 per 100 lbs.	50.00	12.66			
San Francisco and Walnut Grove, Cal.	San Francisco Bay and Sacramento River.	80	20 per 100 lbs.	20.00	5.00			
San Francisco and Stockton, Cal.	San Francisco Bay and San Joaquin River.	94	10 per 100 lbs.	10.00	2.13	9 per 100 lbs.	9.00	1.91
San Francisco and Sacramento, Cal.	San Francisco Bay and Sacramento River.	112	20 per 100 lbs.	20.00	3.57	17 per 100 lbs.	17.00	3.04

[1] Assuming average gross weight of 1 case of eggs (30 dozen) to be 53 pounds. [2] These quotations are by different boats. [3] Average distance, as reported; via short routes.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

HAY, BALED.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Atlantic slope.								
Between—		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Newburgh and Wappingers Falls, N. Y.	Hudson River	12	8 per 100 lbs	8.00	13.33			
Philadelphia, Pa., and Billingsport, N. J.	Delaware River	12	10 per 100 lbs	10.00	16.67			
Albany and New Baltimore, N. Y.	Hudson River	15	15 per bale	[1] 7.50 [2] 15.00	[1] 10.00 [2] 20.00	10 per bale	[1] 5.00 [2] 10.00	[1] 6.67 [2] 13.33
Newburgh and Poughkeepsie, N. Y.	do	16	8 per 100 lbs	8.00	10.00			
Philadelphia, Pa., and Bridgeport, N. J.	Delaware River	18	10 per 100 lbs	10.00	11.11			
Philadelphia and Chester, Pa.	do	18	8 per 100 lbs	8.00	8.89	5 per 100 lbs	5.00	5.56
Hartford and Middletown, Conn.	Connecticut River	20	13 per 100 lbs	13.00	13.00	6 per 100 lbs	6.00	6.00
Burlington, Vt., and Plattsburg, N. Y.	Lake Champlain	22	5 per 100 lbs	5.00	4.55			
Gardiner and Bath, Me.	Kennebec River	24	200 per ton	10.00	8.33	120 per ton	6.00	5.00
Newburgh and Haverstraw, N. Y.	Hudson River	24	do	10.00	8.33			
Philadelphia, Pa., and Wilmington, Del.	Delaware River	31	12 per 100 lbs	12.00	7.74	7 per 100 lbs	7.00	4.52
Albany and Catskill, N. Y.	Hudson River	33	15 per 100 lbs	15.00	9.09	12½ per 100 lbs	12.50	7.58
Philadelphia, Pa., and Trenton, N. J.	Delaware River	36	12 per 100 lbs	12.00	6.67	7 per 100 lbs	7.00	3.89
Burlington and St. Albans Bay, Vt.	Lake Champlain	40	5 per 100 lbs	5.00	2.50			
Lake George and Baldwin, N. Y.	Lake George	40	15 per 100 lbs	15.00	7.50	12 per 100 lbs	12.00	6.00
Hartford and East Haddam, Conn.	Connecticut River	41	14 per 100 lbs	14.00	6.83	7 per 100 lbs	7.00	3.41
Philadelphia, Pa., and Salem, N. J.	Delaware River	45	10 per 100 lbs	10.00	4.44			
Georgetown and Conway, S. C.	Waccamaw River	46	7½ per 100 lbs	7.50	3.26			
Hartford and Lyme, Conn.	Connecticut River	49	16 per 100 lbs	16.00	6.53	8 per 100 lbs	8.00	3.27
Washington, D. C., and Mount Holly, Va.	Potomac River	84	250 per ton	12.50	2.98			
Georgetown and Cains Landing, S. C.	Peedee River	86	10 per bale	[1] 5.00 [2] 10.00	[1] 1.16 [2] 2.33			
Philadelphia, Pa., and Frederica, Del.	Delaware River and Murder Kill Creek	90	150 per ton	7.50	1.67			
Newburgh and Troy, N. Y.	Hudson River	91	19 per 100 lbs	19.00	4.18			
New York and Saugerties, N. Y.	do	98	250 per ton	12.50	2.55			
Norfolk and Richmond, Va.	Elizabeth and James Rivers	116	13 per 100 lbs	13.00	2.24	9 per 100 lbs	9.00	1.55
Baltimore and Salisbury, Md.	Chesapeake Bay and Wicomico River	142	30 per 100 lbs	30.00	4.23			
Baltimore and Bristol, Md.	Chesapeake Bay and Patuxent River	150	do	30.00	4.00			
Baltimore, Md., and Seaford, Del.	Chesapeake Bay and Nanticoke River	160	do	30.00	3.75			

Hartford, Conn., and New York, N.Y.	Connecticut River and Long Island Sound.	162	22 per 100 lbs.	22.00	2.72	11 per 100 lbs.	11.00	1.36
Baltimore, Md., and West Point, Va.	Chesapeake Bay and York River	195	13 per 100 lbs.	13.00	[1] 1.33	10 per 100 lbs.	10.00	1.03
Savannah and Augusta, Ga.	Savannah River	202	15 per bale	[1] 7.50 / [2] 15.00	[1] 1.74 / [2] 1.49			
Baltimore, Md., and Tappahannock, Va.	Chesapeake Bay and Rappahannock River.	225	15 per 100 lbs.	15.00	1.33	12½ per 100 lbs.	12.50	1.11
Baltimore, Md., and Fredericksburg, Va.	do	285	do	15.00	1.05	do	12.50	.88
Mississippi Valley, including Gulf slope.								
Between—								
Charleston and Montgomery, W. Va.	Great Kanawha River	28	150 per ton	7.50	5.36			
Cairo, Ill., and Paducah, Ky.	Ohio River	45	10 per 100 lbs.	10.00	4.44	8 per 100 lbs.	8.00	3.56
Charleston, W.Va., and Gallipolis, Ohio	Great Kanawha and Ohio Rivers	62	175 per ton	8.75	2.82	150 per ton	7.50	2.42
New Orleans and Donaldsonville, La.	Mississippi River	79	15 per 100 lbs.	15.00	3.80			
Chattanooga and Kingston, Tenn.	Tennessee River	104	25 per 100 lbs.	25.00	4.81	7 per 100 lbs.	7.00	1.35
St. Louis and Louisiana, Mo.	Mississippi River	107	10 per 100 lbs.	10.00	1.87			
Cincinnati, Ohio, and Louisville, Ky.	Ohio River	128	200 per ton	10.00	1.56	150 per ton	7.50	1.17
Evansville, Ind., and Paducah, Ky.	do	137	10 per 100 lbs.	10.00	1.46	7½ per 100 lbs.	7.50	1.09
Chattanooga, Tenn., and Decatur, Ala.	Tennessee River	160	25 per 100 lbs.	25.00	3.12	10 per 100 lbs.	10.00	1.25
Evansville, Ind., and Louisville, Ky.	Ohio River	185	10 per 100 lbs.	10.00	1.08			
St. Louis, Mo., and Peoria, Ill.	Mississippi and Illinois Rivers	200	25 per 100 lbs.	25.00	2.50			
Cincinnati, Ohio, and Parkersburg, W. Va.	Ohio River	200	150 per ton	7.50	.75			
Mobile and Demopolis, Ala.	Mobile and Tombigbee Rivers	230	20 per 100 lbs.	20.00	1.74			
Memphis, Tenn., and Cairo, Ill.	Mississippi River	254	15 per 100 lbs.	15.00	1.18	10 per 100 lbs.	10.00	.79
Cincinnati, Ohio, and Charleston, W.Va.	Ohio and Great Kanawha Rivers	263	250 per ton	12.50	.95			
Memphis, Tenn., and Paducah, Ky.	Mississippi and Ohio Rivers	299	20 per 100 lbs.	20.00	1.34	10 per 100 lbs.	10.00	.67
Mobile and Selma, Ala.	Mobile and Alabama Rivers	308	do	20.00	1.30	15 per 100 lbs.	15.00	.97
Pittsburgh, Pa., and Charleston, W. Va.	Ohio and Great Kanawha Rivers	325	250 per ton	12.50	.77	200 per ton	10.00	.62
Memphis, Tenn., and Vicksburg, Miss.	Mississippi River	370	12½ per 100 lbs.	12.50	.68	10 per 100 lbs.	10.00	.54
St. Paul, Minn., and Davenport, Iowa	do	378	18 per 100 lbs.	18.00	.95			
St. Louis and Kansas City, Mo.	Mississippi and Missouri Rivers	407				10 per 100 lbs.	10.00	.49
Memphis, Tenn., and St. Louis, Mo.	Mississppi River	415	20 per 100 lbs.	20.00	.96	do	10.00	.48
New Orleans, La., and Carriola, Ark.	do	446	15 per 100 lbs.	15.00	.67			
Pacific slope.								
Between—								
Kennewick and White Bluffs, Wash.	Columbia River	42	10 per 100 lbs.	10.00	4.76			
Wenatchee and Brewster, Wash.	do	70	17½ per 100 lbs.	7.50	5.00			
San Francisco and Walnut Grove, Cal.	San Francisco Bay and Sacramento River.	80	300 per ton	15.00	3.75			
San Francisco and Stockton, Cal.	San Francisco Bay and San Joaquin River.	94	do	15.00	3.19	250 per ton	12.50	2.66
San Francisco and Sacramento, Cal.	San Francisco Bay and Sacramento River.	112	15 per 100 lbs.	15.00	2.68	12½ per 100 lbs.	12.50	2.23
Kennewick, Wash., and Portland Oreg.	Columbia and Willamette Rivers	239	42 per 100 lbs.	42.00	3.51	12 per 100 lbs.	12.00	1.00

[1] Average for 50-pound bales.

[2] Average for 100-pound bales. No actual average weight is available for a bale of hay, as carried over this route.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

PEANUTS.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Atlantic slope.		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Between—								
Norfolk and Richmond, Va.	Elizabeth and James Rivers	116	21 per 100 lbs.	21.00	3.62	15 per 100 lbs.	15.00	2.59
Baltimore, Md., and Norfolk, Va.	Chesapeake Bay	184	do	21.00	2.28	do	15.00	1.63
Mississippi Valley, including Gulf slope.								
Between—								
Paducah, Ky., and Britts Landing, Tenn.	Tennessee River	138	20 per 100 lbs.	20.00	2.90	15 per 100 lbs.	15.00	2.17
Memphis, Tenn., and Paducah, Ky.	Mississippi and Ohio Rivers	299	do	20.00	1.34	12½ per 100 lbs.	12.50	.84

POTATOES.

Atlantic slope.								
Between—								
Newburgh and Wappingers Falls, N. Y.	Hudson River	12	10 per 2½ to 3 bu. sack	[1] 6.67	[1] 11.11			
Philadelphia, Pa., and Billingsport, N. J.	Delaware River	12	8 per 100 lbs.	8.00	13.33	6 per 100 lbs.	6.00	10.00
Albany and New Baltimore, N. Y.	Hudson River	15	10 per barrel	[2] 5.26	[2] 7.01	8 per barrel	[2] 4.21	[2] 5.61
Newburgh and Poughkeepsie, N. Y.	do	16	do	[2] 5.26	[2] 6.58			
Philadelphia, Pa., and Bridgeport, N. J.	Delaware River	18	8 per 100 lbs.	8.00	8.89	6 per 100 lbs.	6.00	6.67
Philadelphia and Chester, Pa.	do	18	6 per 100 lbs.	6.00	6.67	5 per 100 lbs.	5.00	5.56
Hartford and Middletown, Conn.	Connecticut River	20	7 per 100 lbs.	7.00	7.00	6 per 100 lbs.	6.00	6.00
Burlington, Vt., and Plattsburg, N. Y.	Lake Champlain	22	5 per 100 lbs.	5.00	4.55			
Gardiner and Bath, Me.	Kennebec River	24	8 per 100 lbs.	8.00	6.67	6 per 100 lbs.	6.00	5.00
Newburgh and Haverstraw, N. Y.	Hudson River	24	15 per sack	[1] 10.00	[1] 8.33	10 per sack	[1] 6.67	[1] 5.56
Jacksonville and Green Cove Springs, Fla.	St. Johns River	30	20 per barrel	[2] 10.53	[2] 7.02			
Philadelphia, Pa., and Wilmington, Del.	Delaware River	31	8 per 100 lbs.	8.00	5.16	7 per 100 lbs.	7.00	4.52
Albany and Catskill, N. Y.	Hudson River	33	10 per barrel	[2] 5.26	[2] 3.19			
Philadelphia, Pa., and Trenton, N. J.	Delaware River	36	8 per 100 lbs.	[2] 8.00	4.44	7 per 100 lbs.	7.00	3.89
Burlington and St. Albans Bay, Vt.	Lake Champlain	40	do	8.00	4.00			

Lake George and Baldwin, N. Y.	Lake George	40	15 per 100 lbs.	15.00	7.50	12 per 100 lbs.	12.00	6.00
Hartford and East Haddam, Conn.	Connecticut River	41	8 per 100 lbs.	8.00	3.90	7 per 100 lbs.	7.00	3.41
Philadelphia, Pa., and Salem, N. J.	Delaware River	45	8 per 100 lbs.	8.00	3.56	6 per 100 lbs.	6.00	2.67
Philadelphia, Pa., and Delaware City, Del.	do	45	9 per 100 lbs.	9.00	4.00	8 per 100 lbs.	8.00	3.56
Georgetown and Conway, S. C.	Waccamaw River	46	14 per 100 lbs.	14.00	6.09			
Hartford and Lyme, Conn.	Connecticut River	49	12 per 100 lbs.	12.00	4.90	8 per 100 lbs.	8.00	3.27
Philadelphia, Pa., and Frederica, Del.	Delaware River and Murder Kill Creek.	90	20 per barrel	[2] 10.53	[2] 2.34			
Newburgh and Troy, N. Y.	Hudson River	91	15 per barrel	[2] 7.89	[2] 1.73	7 per 100 lbs.	7.00	1.54
New York and Saugerties, N. Y.	do	98	20 per bag	[1] 13.33	[1] 2.72			
Norfolk and Richmond, Va.	Elizabeth and James Rivers	116	20 per barrel	[2] 10.53	[2] 1.82			
Philadelphia, Pa., and Baltimore, Md.	Delaware River, canal, and Chesapeake Bay.	120	11 per 100 lbs.	11.00	1.83	9 per 100 lbs.	9.00	1.50
Baltimore and Salisbury, Md.	Chesapeake Bay and Wicomico River.	142	25 per barrel	[2] 13.16	[2] 1.85			
Jacksonville and Sanford, Fla.	St. Johns River	147	10 per pkg. of 50 lbs.	20.00	2.72	20 per bbl. of 150 lbs.	13.33	1.81
Baltimore and Bristol, Md.	Chesapeake Bay and Patuxent River.	150	25 per barrel	[2] 13.16	[2] 1.75			
Baltimore, Md., and Seaford, Del.	Chesapeake Bay and Nanticoke River	160	do	[2] 13.16	[2] 1.04			
Hartford, Conn., and New York, N. Y.	Connecticut River and Long Island Sound.	162	13 per 100 lbs.	13.00	1.60	11 per 100 lbs.	11.00	1.36
Baltimore, Md., and Norfolk, Va.	Chesapeake Bay	184	20 per flour barrel 13 per 100 lbs. in bags [3]	[2] 10.53 13.00	[2] 1.14 1.41			
Baltimore, Md., and West Point, Va.	Chesapeake Bay and York River	195	25 per barrel	[2] 13.16	[2] 1.35			
Savannah and Augusta, Ga.	Savannah River	202	25 per sack	[1] 16.67	[1] 1.65			
Baltimore, Md., and Tappahannock, Va.	Chesapeake Bay and Rappahannock River.	225	25 per barrel	[2] 13.16	[2] 1.17			
Baltimore, Md., and Fredericksburg, Va.	do	285	do	[2] 13.16	[2] .92			
Brunswick and Macon, Ga.	Altamaha and Ocmulgee Rivers	370	7 per 100 lbs.	7.00	.38	6 per 100 lbs.	6.00	.32
Mississippi Valley, including Gulf slope.								
Between—								
Shawneetown and Cave in Rock, Ill.	Ohio River	25	10 per 100 lbs.	10.00	8.00			
Charleston and Montgomery, W. Va.	Great Kanawha River	28	4 per bushel	[4] 6.67	[4] 4.76			
Cairo, Ill., and Paducah, Ky.	Ohio River	45	10 per 100 lbs.	10.00	4.44	8 per 100 lbs.	8.00	3.56
Lake Charles and Cameron, La.	Calcasieu River and Lake	53	do	10.00	3.77			
Charleston, W. Va., and Gallipolis, Ohio.	Great Kanawha and Ohio Rivers	62	4 per bushel	[4] 6.67	[4] 2.15			
Memphis, Tenn., and White Hall, Ark.	Mississippi River	65	15 per 100 lbs.	15.00	4.62			
Albany and Bainbridge, Ga.	Flint River	69	10 per 100 lbs.	10.00	2.90			
Shawneetown and Rosiclare, Ill.	Ohio River	76	do	10.00	2.63			
St. Louis, Mo., and Rip Rap, Ill.	Mississippi River	90	25 per barrel	[2] 13.16	[2] 2.92			
Vicksburg and Natchez, Miss.	do	100	12½ per 100 lbs.	12.50	2.50			
Chattanooga and Kingston, Tenn.	Tennessee River	104	25 per 100 lbs.	25.00	4.81	20 per 100 lbs.	20.00	3.85
Memphis, Tenn., and Friar Point, Miss.	Mississippi River	105	12½ per 100 lbs.	12.50	2.38	10 per 100 lbs.	10.00	1.90
Cincinnati, Ohio, and Louisville, Ky.	Ohio River	128	15 per barrel	[2] 7.89	[2] 1.23			
Chattanooga, Tenn., and Decatur, Ala.	Tennessee River	160	25 per 100 lbs.	25.00	3.12	20 per 100 lbs.	20.00	2.50
Apalachicola, Fla., and Bainbridge, Ga.	Apalachicola and Flint Rivers	173	10 per 100 lbs.	10.00	1.16			

[1] Assuming the average gross weight of 1 sack or bag of potatoes to be 150 pounds.
[2] Assuming the average gross weight of 1 barrel of potatoes to be 190 pounds.
[3] Southbound, in winter.
[4] Assuming the average weight of 1 bushel of potatoes to be 60 pounds.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

POTATOES—Continued.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Mississippi Valley, including Gulf slope—Continued.		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Between—								
Evansville, Ind., and Bowling Green, Ky.	Ohio, Green, and Big Barren Rivers	190	17½ per 100 lbs.	17.50	1.84	12½ per 100 lbs.	12.50	1.32
St. Louis, Mo., and Peoria, Ill.	Mississippi and Illinois Rivers	200	20 per 100 lbs.	20.00	2.00	15 per 100 lbs.	15.00	1.50
Cincinnati, Ohio, and Parkersburg, W. Va.	Ohio River	200	8 per bushel	[1] 13.33	[1] 1.33			
Memphis, Tenn., and Arkansas City, Ark.	Mississippi River	209	20 per 100 lbs.	20.00	1.91	15 per 100 lbs.	15.00	1.44
Mobile and Demopolis, Ala.	Mobile and Tombigbee Rivers	230	25 per barrel	[2] 13.16	[2] 1.14			
Memphis, Tenn., and Cairo, Ill.	Mississippi River	254	15 per 100 lbs.	15.00	1.18	12½ per 100 lbs.	12.50	.98
Cincinnati, Ohio, and Charleston, W. Va.	Ohio and Great Kanawha Rivers	263	25 per barrel	[2] 13.16	[2] 1.00			
Mobile and Selma, Ala.	Mobile and Alabama Rivers	308	20 per sack	[3] 13.33	[3] .87			
Pittsburgh, Pa., and Charleston, W. Va.	Ohio and Great Kanawha Rivers	325	25 per barrel	[2] 13.16	[2] .81	20 per barrel	10.53	.65
New Orleans and Harrisonburg, La.	Mississippi, Red, and Black Rivers	340	30 per 100 lbs.	30.00	1.76	20 per 100 lbs.	20.00	1.18
Apalachicola, Fla., and Columbus, Ga.	Apalachicola and Flint Rivers	360	15 per 2½ bushels	[1] 10.00	[1] .55			
Vicksburg, Miss., and Memphis, Tenn.	Mississippi River	370	10 per 100 lbs.	10.00	.54			
St. Paul, Minn., and Davenport, Iowa	do	378	18 per 100 lbs.	18.00	.95			
St. Louis and Kansas City, Mo.	Mississippi and Missouri Rivers	407	28 per 100 lbs.	28.00	1.38	22 per 100 lbs.	22.00	1.08
New Orleans, La., and Carriola, Ark.	Mississippi River	446	15 per sack	[3] 10.00	[3] .45			
Cincinnati, Ohio, and Pittsburgh, Pa.	Ohio River	470	20 per barrel	[2] 10.53	[2] .45	15 per barrel	[2] 7.89	[2] .34
Memphis, Tenn., and Cincinnati, Ohio.	Mississippi and Ohio Rivers	749	22½ per 100 lbs.	22.50	.60	18½ per 100 lbs.	18.50	.49
Pacific slope.								
Between—								
Wenatchee and Bridgeport, Wash.	Columbia River	79	15 per 100 lbs.	15.00	3.80			
San Francisco and Walnut Grove, Cal.	San Francisco Bay and Sacramento River.	83	10 per sack (120 lbs)	8.33	2.08	8 per sack (120 lbs)	6.67	1.67
San Francisco and Stockton, Cal.	San Francisco Bay and San Joaquin River.	94	do	8.33	1.77	8 per sack (120 lbs)	6.67	1.42
San Francisco and Sacramento, Cal.	San Francisco Bay and Sacramento River.	112	12 per 100 lbs.	12.00	2.14			

RICE, ROUGH (UNHULLED).

Atlantic slope.								
Between—								
Georgetown and Conway, S. C.	Waccamaw River	46	10 per 100 lbs.	10.00	4.35			
Georgetown and Cains Landing, S. C.	Peedee River	88	10 per sack	[4] 5.56	[4] 1.29			
Mississippi Valley, including Gulf slope.								
Between—								
Lake Charles and Cameron, La.	Calcasieu River and Lake	53	10 per 100 lbs [5]	10.00	3.77	5 per 100 lbs.	5.00	1.89
			15 per 100 lbs [5]	15.00	5.66	10 per 100 lbs.	10.00	3.77
New Orleans and Donaldsonville, La.	Mississippi River	79	10 per 100 lbs.	10.00	2.53	8 per 100 lbs.	8.00	2.03
New Orleans and Bayou Teche landings, La.[5]	Mississippi River, Bayou Teche, and connecting waterways.	[6] 175	13 per 100 lbs.	13.00	1.49			
		[6] 240	15 per 100 lbs.	15.00	1.25	12 per 100 lbs.	12.00	1.00
New Orleans and Harrisonburg, La.	Mississippi, Red, and Black Rivers	340	25 per 100 lbs.	25.00	1.47	15 per 100 lbs.	15.00	.88

SUGAR.

Mississippi Valley, including Gulf slope.								
Between—								
New Orleans and Donaldsonville, La.	Mississippi River	79	15 per 100 lbs.	15.00	3.80	10 per 100 lbs.	10.00	2.82
New Orleans and Bayou Teche landings, La.[5]	Mississippi River, Bayou Teche, and connecting waterways.	[6] 175	9 per 100 lbs	9.00	1.03			
		[6] 240	15 per 100 lbs.	15.00	1.25	11 per 100 lbs.	11.00	.92

TOBACCO, UNMANUFACTURED.

Atlantic slope.								
Between—								
Philadelphia, Pa., and Delaware City, Del.	Delaware River	45	11 per 100 lbs.	11.00	4.89	9 per 100 lbs.	9.00	4.00
Norfolk and Richmond, Va.	Elizabeth and James Rivers	116	10 per 100 lbs. [7]	10.00	1.72			
Philadelphia, Pa., and Baltimore, Md.	Delaware River, canal, and Chesapeake Bay.	120	11 per 100 lbs.	11.00	1.83			
Mississippi Valley, including Gulf slope.								
Between—								
Cincinnati, Ohio, and Louisville, Ky.	Ohio River	128	150 per hhd.	[8] 8.67	[8] 1.36	100 per hhd.	[8] 5.78	[8] .90
Evansville, Ind., and Bowling Green, Ky.	Ohio, Green, and Big Barren Rivers	190	20 per 100 lbs.	20.00	2.11			

[1] Assuming the average weight of 1 bushel of potatoes to be 60 pounds.
[2] Assuming the average gross weight of 1 barrel of potatoes to be 190 pounds.
[3] Assuming the average weight of 1 sack of potatoes to be 150 pounds.
[4] Assuming the average weight of 1 sack of rice to be 180 pounds.
[5] These quotations are from different boats.
[6] Average distance, as reported. Distance varies greatly, according to route.
[7] In casks, hogsheads, or tierces.
[8] Assuming average gross weight of 1 hogshead of tobacco in this Ohio River trade to be 1,730 pounds.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

VEGETABLES, OTHER THAN POTATOES.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Atlantic slope.								
Between—		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Newburgh and Wappinger Falls, N. Y.	Hudson River	12	10 per 100 lbs.	10.00	16.67			
Philadelphia and Chester, Pa.	Delaware River	18	8 per 100 lbs.	8.00	8.89	6 per 100 lbs.	6.00	6.67
Hartford and Middletown, Conn.	Connecticut River	20	13 per 100 lbs.	13.00	13.00	7 per 100 lbs.	7.00	7.00
Gardiner and Bath, Me.	Kennebec River	24	15 per 100 lbs.	15.00	12.50			
Philadelphia, Pa., and Wilmington, Del.	Delaware River	31	12 per 100 lbs.	12.00	7.74	8 per 100 lbs.	8.00	5.16
Philadelphia, Pa., and Trenton, N. J.	do	36	9, 10, or 12 per 100 lbs.	[1] 10.33	5.74	7 or 8 per 100 lbs.	[1] 7.50	4.17
Lake George and Baldwin, N. Y.	Lake George	40	20 per 100 lbs.	20.00	10.00			
Hartford and East Haddam, Conn.	Connecticut River	41	14 per 100 lbs.	14.00	6.83	8 per 100 lbs.	8.00	3.90
Philadelphia, Pa., and Delaware City, Del.	Delaware River	45	15 per 100 lbs.	15.00	6.67	9 per 100 lbs.	9.00	4.00
Hartford and Lyme, Conn.	Connecticut River	49	16 per 100 lbs.	16.00	6.53	do	9.00	3.67
Newburgh and Troy, N. Y.	Hudson River	91	19 per 100 lbs.	19.00	4.18			
Kissimee and Fort Bassenger, Fla.	Tohopekaliga Lake and Kissimmee River and Lake.	100	10 per crate [2]	20.00	4.00			
Norfolk and Richmond, Va.	Elizabeth and James Rivers	116	13 per 100 lbs.	13.00	2.24			
Philadelphia, Pa., and Baltimore, Md.	Delaware River, canal, and Chesapeake Bay.	120	22 per 100 lbs.	22.00	3.67	11 per 100 lbs.	11.00	1.83
Jacksonville and Sanford, Fla.	St. Johns River	147	10 per crate of 50 lbs.	20.00	2.72	20 per 150 lbs.	13.33	1.81
Hartford, Conn., and New York, N. Y.	Connecticut River and Long Island Sound.	162	22 per 100 lbs.	22.00	2.72	13 per 100 lbs.	13.00	1.60
Baltimore, Md., and Norfolk, Va.	Chesapeake Bay	184	25 per 100 lbs.	25.00	2.72			
Brunswick and Macon, Ga.	Altamaha and Ocmulgee Rivers	370	8 per 100 lbs.	8.00	.43	7 per 100 lbs.	7.00	.38
Mississippi Valley, including Gulf slope.								
Between—								
Shawneetown and Cave in Rock, Ill.	Ohio River	25	10 per 100 lbs.	10.00	8.00			
Cairo, Ill., and Paducah, Ky.	do	45	15 per 100 lbs.	15.00	6.67	10 per 100 lbs.	10.00	4.44
Lake Charles and Cameron, La.	Calcasieu River and Lake	53	15 per 100-lb. crate	15.00	5.66			
Charleston, W. Va., and Gallipolis, Ohio.	Great Kanawha and Ohio Rivers	62	150 per ton	7.50	2.42	125 per ton	6.25	2.02
Memphis, Tenn., and White Hall, Ark.	Mississippi River	65	25 per 100 lbs.	25.00	7.69			
Albany and Bainbridge, Ga.	Flint River	69	15 per 100 lbs.	15.00	4.35			

Shawneetown and Rosiclare, Ill.	Ohio River	76	12 or 15 per 100 lbs.	13.50	3.55	12 per 100 lbs.	12.00	3.16
Vicksburg and Natchez, Miss.	Mississippi River	100	25 per 100 lbs.	25.00	5.00			
Chattanooga and Kingston, Tenn.	Tennessee River	104	do	25.00	4.81	20 per 100 lbs.	20.00	3.85
Memphis, Tenn., and Friar Point, Miss.	Mississippi River	105	22½ per 100 lbs.	22.50	4.29	12 per 100 lbs.	12.00	2.29
Chattanooga, Tenn., and Decatur, Ala.	Tennessee River	160	25 per 100 lbs.	25.00	3.12	20 per 100 lbs.	20.00	2.50
Apalachicola, Fla., and Bainbridge, Ga.	Apalachicola and Flint Rivers	173	10 per 100 lbs.	10.00	1.16			
Evansville, Ind., and Bowling Green, Ky.	Ohio, Green, and Big Barren Rivers	190	20 per 100 lbs.	20.00	2.11	15 per 100 lbs.	15.00	1.58
Memphis, Tenn., and Arkansas City, Ark.	Mississippi River	209	25 per 100 lbs.	25.00	2.39	20 per 100 lbs.	20.00	1.91
Memphis, Tenn., and Cairo, Ill.	do	254	26½ per 100 lbs.	26.50	2.09	15 per 100 lbs.	15.00	1.18
Cincinnati, Ohio, and Charleston, W. Va	Ohio and Great Kanawha Rivers	263	25 per 100 lbs.	25.00	1.90			
New Orleans and Harrisonburg, La.	Mississippi, Red, and Black Rivers	340	30 per 100 lbs.	30.00	1.76	20 per 100 lbs.	20.00	1.18
Apalachicola, Fla., and Columbus, Ga.	Apalachicola and Chattahoochee Rivers	360	25 per 100 lbs.	25.00	1.39			
Vicksburg, Miss., and Memphis, Tenn.	Mississippi River	370	22½ per 100 lbs.	22.50	1.22	15 per 100 lbs.	15.00	.81
St. Paul, Minn., and Davenport, Iowa	do	378	15 or 20 per 100 lbs.	17.50	.93			
St. Louis and Kansas City, Mo.	Mississippi and Missouri Rivers	407	48 per 100 lbs.	48.00	2.36	22 per 100 lbs.	22.00	1.08
Cincinnati, Ohio, and Pittsburgh, Pa.	Ohio River	470	30 per 100 lbs.	30.00	1.28	15 per 100 lbs.	15.00	.64

WHEAT.

Atlantic slope.								
Between—								
Philadelphia and Chester, Pa.	Delaware River	18	5 per 100 lbs.	5.00	5.56	4 per 100 lbs.	4.00	4.44
Philadelphia, Pa., and Wilmington, Del.	do	31	6 per 100 lbs.	6.00	3.87	5 per 100 lbs.	5.00	3.23
Philadelphia, Pa., and Salem, N. J.	do	45	8 per 100 lbs.	8.00	3.56	6 per 100 lbs.	6.00	2.67
Philadelphia, Pa., and Delaware City, Del.	do	45	do	8.00	3.56	7 per 100 lbs.	7.00	3.11
Washington, D. C., and Mount Holly, Va.	Potomac River	84	4 per bushel	[3] 6.67	[3] 1.59			
Philadelphia, Pa., and Frederica, Del.	Delaware River and Murder Kill Creek	90	3 per bushel	[3] 5.00	[3] 1.11			
Philadelphia, Pa., and Baltimore, Md.	Delaware River, canal, and Chesapeake Bay.	120	9 per 100 lbs.	9.00	1.50	8 per 100 lbs.	8.00	1.33
Baltimore and Salisbury, Md.	Chesapeake Bay and Wicomico River.	142	4 per bushel	[3] 6.67	[3] .94			
Baltimore and Bristol, Md.	Chesapeake Bay and Patuxent River.	150	5 per bushel	[3] 8.33	[3] 1.11			
Baltimore, Md., and Seaford, Del.	Chesapeake Bay and Nanticoke River.	160	4 per bushel	[3] 6.67	[3] .83			
Baltimore, Md., and Norfolk, Va.	Chesapeake Bay	184	10 per 100 lbs.	10.00	1.09	7 per 100 lbs.	7.00	.76
Baltimore, Md., and West Point, Va.	Chesapeake Bay and York River	195	do	10.00	1.03	do	7.00	.72
Baltimore, Md., and Tappahannock, Va	Chesapeake Bay and Rappahannock River.	225	5 per bushel	[3] 8.33	[3] .74			
Baltimore, Md., and Fredericksburg, Va.	do	285	do	[3] 8.33	[3] .58			

[1] Mean of quotations given.
[2] Assuming the average weight of 1 crate of vegetables to be 50 pounds.
[3] Assuming the average weight of 1 bushel of wheat to be 60 pounds.

TABLE 2.—*Freight rates by boat on various farm products during September and October, 1912*—Continued.

WHEAT—Continued.

Route.	Waterway.	Distance.	Freight rates.					
			On small lots, or any quantity.			On large lots, where specially quoted.		
			As quoted to shippers.	Per 100 pounds.	Per short ton per mile.	As quoted to shippers.	Per 100 pounds.	Per short ton per mile.
Mississippi Valley, including Gulf slope.								
Between—		*Miles.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Shawneetown and Cave in Rock, Ill.	Ohio River	25	10 per 100 lbs.	10.00	8.00			
Charleston and Montgomery, W. Va.	Great Kanawha River	28	3 per bush	[1] 5.00	[1] 3.57			
Cairo, Ill., and Paducah, Ky.	Ohio River	45	8 per 100 lbs.	8.00	3.56			
Charleston, W. Va., and Gallipolis, Ohio	Great Kanawha and Ohio Rivers	62	2½ per bush [2]	[1] 4.17	[1] 1.39			
			7 per sack [2]	[1] 5.83	[1] 1.88	6 per sack	5.00	1.61
Shawneetown and Rosiclare, Ill.	Ohio River	76	5 per 100 lbs.	5.00	1.32			
St. Louis, Mo., and Rip Rap, Ill.	Mississippi River	90	8 per 100 lbs.	8.00	1.78			
Chattanooga and Kingston, Tenn.	Tennessee River	104	25 per 100 lbs.	25.00	4.81	6 per 100 lbs.	6.00	1.15
St. Louis and Louisiana, Mo.	Mississippi River	107	8 per 100 lbs.	8.00	1.50			
Evansville, Ind., and Paducah, Ky.	Ohio River	137	6 per 100 lbs.	6.00	.88			
Bismarck and Williston, N. Dak.	Missouri River	150	8 per 100 lbs.	8.00	1.07			
Chattanooga, Tenn., and Decatur, Ala.	Tennessee River	160	25 per 100 lbs.	25.00	3.12	10 per 100 lbs.	10.00	1.25
Evansville, Ind., and Louisville, Ky.	Ohio River	185	6 per 100 lbs.	6.00	.65			
St. Louis, Mo., and Peoria, Ill.	Mississippi and Illinois Rivers	200	12½ per 100 lbs.	12.50	1.25	10 per 100 lbs.	10.00	1.00
Cincinnati, Ohio, and Charleston, W. Va.	Ohio and Great Kanawha Rivers	263	5 per bush	[1] 8.33	[1] .63			
Memphis, Tenn., and Paducah, Ky.	Mississippi and Ohio Rivers	299	9 per 100 lbs.	9.00	.60			
Pittsburgh, Pa., and Charleston, W. Va.	Ohio and Great Kanawha Rivers	325	10 per 100 lbs.	10.00	.62			
St. Paul, Minn., and Davenport, Iowa	Mississippi River	378	18 per 100 lbs.	18.00	.95			
St. Louis and Kansas City, Mo.	Mississippi and Missouri Rivers	407				7½ per 100 lbs.	7.50	.37
Memphis, Tenn., and St. Louis, Mo.	Mississippi River	415	10 per 100 lbs.	10.00	.48			
Memphis, Tenn., and Cincinnati, Ohio	Mississippi and Ohio Rivers	749	13½ per 100 lbs.	13.50	.36	10 per 100 lbs.	10.00	.27
Pacific slope.								
Between—								
Kennewick and White Bluffs, Wash.	Columbia River	42	10 per 100 lbs.	10.00	4.76			
Wenatchee and Bridgeport, Wash.	do	79	30 per 100 lbs.	30.00	6.33	200 per ton	10.00	2.53
San Francisco and Walnut Grove, Cal.	San Francisco Bay and Sacramento River.	80	200 per ton	10.00	2.50	110 per ton	5.50	1.38

San Francisco and Stockton, Cal.	San Francisco Bay and San Joaquin River.	94	180 per ton	9.00	1.91	125 per ton [2]	6.25	1.33
						90 per ton [2]	4.50	.96
San Francisco and Sacramento, Cal.	San Francisco Bay and Sacramento River.	112	200 per ton	10.00	1.79	125 per ton	6.25	1.12
Kennewick, Wash., and Portland, Oreg.	Columbia and Willamette Rivers	239	37 per 100 lbs.	37.00	3.10	12 per 100 lbs.	12.00	1.00

WOOL.

Atlantic slope.								
Between—								
Hartford, Conn., and New York, N. Y.	Connecticut River and Long Island Sound.	162	22 per 100 lbs.	22.00	2.72	19 per 100 lbs.	19.00	2.35
Mississippi Valley, including Gulf slope.								
Between—								
Charleston and Montgomery, W. Va.	Great Kanawha River	28	10 per 100 lbs.	10.00	7.14			
Charleston, W. Va., and Gallipolis, Ohio	Great Kanawha and Ohio Rivers	62	15 per 100 lbs. [2]	15.00	4.84			
			25 per 100 lbs [2]	25.00	8.06			
St. Louis, Mo., and Rip Rap, Ill.	Mississippi River	90	25 per 100 lbs.	25.00	5.56			
Paducah, Ky., and Britt Landing, Tenn.	Tennessee River	138	35 per 100 lbs.	35.00	5.07	20 per 100 lbs.	20.00	2.90
Evansville, Ind., and Bowling Green, Ky.	Ohio, Green, and Big Barren Rivers	190	20 per 100 lbs.	20.00	2.11			
Cincinnati, Ohio, and Parkersburg, W. Va.	Ohio River	200	15 per 100 lbs.	15.00	1.50			
Cincinnati, Ohio, and Charleston, W. Va.	Ohio and Great Kanawha Rivers	263	25 per 100 lbs.	25.00	1.90			
Pittsburgh, Pa., and Charleston, W. Va.	do	325	40 per 100 lbs.	40.00	2.46			
Cincinnati, Ohio, and Pittsburgh, Pa.	Ohio River	470	30 per 100 lbs.	30.00	1.28	25 per 100 lbs.	25.00	1.06
Pacific slope.								
Between—								
Kennewick and White Bluffs, Wash.	Columbia River	42	20 per 100 lbs.	20.00	9.52			
Kennewick, Wash., and Portland, Oreg.	Columbia and Willamette Rivers	239	42 per 100 lbs.	42.00	3.51	31 per 100 lbs.	31.00	2.59

[1] Assuming the average weight of 1 bushel of wheat to be 60 pounds and 1 sack to contain an average of 2 bushels.

[2] These quotations are from different boats.

TABLE 3.—*Comparison of freight rates by water and by rail over selected routes for September and October, 1912.*

[Sources: Rates by water reported by representatives of steamboats and steamboat lines; rates by rail reported by the Division of Tariffs, Interstate Commerce Commission.]

Water.			Rail.				
Route, distance, and commodity.	Freight rate.		Route, distance, and commodity.	Freight rate.			
	Per 100 pounds.	Per short ton per mile.		Per 100 pounds.		Per short ton per mile.	
				Amount.	Excess over water.	Amount.	Excess over water.
Between Hartford, Conn., and New York, N. Y. (162 miles).			*Hartford, Conn., to New York, N. Y. (110 miles).*				
Apples:	*Cents.*	*Cents.*	Apples:	*Cents.*	*Cents.*	*Cents.*	*Cents.*
Less than carload	16.00	1.98	Less than carload	16.00	.....	2.91	0.93
Carload	11.00	1.36	Carload	11.00	.....	2.00	.64
Eggs: Any quantity	19.00	2.35	Eggs: Less than carload and carload	19.00	.....	3.45	1.10
Hay:			Hay:				
Less than carload	22.00	2.72	Less than carload	22.00	.....	4.00	1.28
Carload	11.00	1.36	Carload	11.00	.....	2.00	.64
Potatoes:			Potatoes:				
Less than carload	13.00	1.60	Less than carload	13.00	.....	2.36	.76
Carload	11.00	1.36	Carload	11.00	.....	2.00	.64
Between Cincinnati, Ohio, and Pittsburgh, Pa. (470 miles).			*Cincinnati, Ohio, to Pittsburgh, Pa. (311 miles).*				
Apples:			Apples:				
Under 24,000 pounds	[1] 12.58	1.54	Less than carload	26.00	13.42	1.67	1.13
24,000 pounds and over	[1] 9.43	1.40	Carload	15.00	5.57	.96	.56
Eggs: Any quantity	[2] 28.30	[2] 1.20	Eggs: Any quantity	35.00	6.70	2.25	1.05
Potatoes:			Potatoes:				
Under 24,000 pounds	[3] 10.53	3.45	Less than carload	18.00	7.47	1.16	.71
24,000 pounds and over	[3] 7.89	3.34	Carload	15.00	7.11	.96	.62
Wool:			Wool:				
Under 24,000 pounds	30.00	1.28	Less than carload	41.00	11.00	2.64	1.36
24,000 pounds and over	25.00	1.06	Carload	26.00	1.00	1.67	.61

Between Cincinnati, Ohio, and Charleston, W. Va. (263 miles).		
Apples: Any quantity	[1] 15.72	[1] 1.20
Eggs: Any quantity	[2] 37.74	[2] 2.87
Hay: Any quantity	12.50	.95
Potatoes: Any quantity	[3] 13.16	[3] 1.00
Between Cincinnati, Ohio, and Memphis, Tenn. (749 miles).		
Eggs: Less than carload	[2] 75.47	[2] 2.02
Potatoes:		
Less than carload	22.50	.60
Carload	18.50	.49
Wheat:		
Less than carload	13.50	.36
Carload	10.00	.27
Between St. Louis, Mo., and Memphis, Tenn. (415 miles).		
Apples:		
Less than carload	[1] 18.87	1.91
Carload	[1] 12.58	1.61
Eggs: Any quantity	[2] 66.04	[2] 3.18
Hay:		
Less than carload	20.00	.96
Carload	10.00	.48
Wheat: Any quantity	10.00	.48

Charleston, W. Va., to Cincinnati, Ohio (211 miles).				
Apples:				
Less than carload	22.00	6.28	2.09	.89
Carload	12.00	[4] 3.72	1.14	[4] .06
Eggs: Any quantity	28.50	[4] 9.24	2.70	[4] .17
Hay:				
Less than carload	22.00	9.50	2.09	1.14
Carload	12.00	[4] .50	1.14	.19
Potatoes:				
Less than carload	15.00	1.84	1.42	.42
Carload	12.00	[4] 1.16	1.14	.14
Cincinnati, Ohio, to Memphis, Tenn. (494 miles).				
Eggs: Any quantity	60.00	[4] 15.47	2.43	.21
Potatoes:				
Less than carload	30.00	7.50	1.21	.61
Carload	26.00	7.50	1.05	.56
Wheat:				
Less than carload	17.00	3.50	.69	.33
Carload		7.00		.42
St. Louis, Mo., to Memphis, Tenn. (322 miles).				
Apples:				
Less than carload	25.00	6.13	1.55	.64
Carload	22.00	9.42	1.37	.76
Eggs: Any quantity	50.00	[4] 16.04	3.11	[4] .07
Hay:				
Less than carload	30.00	10.00	1.86	.90
Carload	12.00	2.00	.75	.27
Wheat:				
Less than carload	12.00	2.00	.75	.27
Carload	11.00	1.00	.68	.20

[1] Computed from a quoted rate per barrel, assuming average gross weight of 1 barrel of apples to be 159 pounds.
[2] Computed from a quoted rate per case (30 dozen), assuming the average weight of 1 case to be 53 pounds.
[3] Computed from a quoted rate per barrel, assuming the average gross weight of 1 barrel of potatoes to be 190 pounds.
[4] Excess of water rate over rail rate.

TABLE 4.—*Distance and time of transit over selected river routes in the United States during September and October, 1912.*

[Sources: Distances chiefly as reported by the Chief of Engineers, War Department; time of transit as reported by representatives of steamboats or steamboat lines.]

Route.	Miles.	Hours.	Miles per hour.
Atlantic slope.			
Between—			
Newburgh and Wappingers Falls, N. Y	12	1.50	8.0
Philadelphia, Pa., and Billingsport, N. J	12	1.00	12.0
New Baltimore and Albany, N. Y	15	1.75	8.6
Newburgh and Poughkeepsie, N. Y	16	3.00	5.3
Philadelphia, Pa., and Bridgeport, N. J	18	2.00	9.0
Philadelphia and Chester, Pa	18	1.50	12.0
Hartford and Middletown, Conn	20	2.00	10.0
Burlington, Vt., and Plattsburg, N. Y	22	1.50	14.7
Gardiner and Bath, Me	24	2.50	9.6
Newburgh and Haverstraw, N. Y	24	4.00	6.0
Jacksonville and Green Cove Springs, Fla	30	4.00	7.5
Philadelphia, Pa., and Wilmington, Del	31	2.00	15.5
Albany and Catskill, N. Y	33	3.50	9.4
Philadelphia, Pa., and Trenton, N. J	36	3.00	12.0
Burlington and St. Albans Bay, Vt	40	3.50	11.4
Lake George and Baldwin, N. Y	40	3.00	13.3
Hartford and East Haddam, Conn	41	3.75	10.9
Philadelphia, Pa., and Salem, N. J	45	4.00	11.2
Philadelphia, Pa., and Delaware City, Del	45	4.00	11.2
Georgetown and Conway, S. C	46	8.00	5.8
Hartford and Lyme, Conn	49	5.00	9.8
Jacksonville and St. Augustine, Fla	58	12.00	4.8
Savannah, Ga., and Beaufort, S. C	60	7.00	8.6
Washington, D. C., and Mount Holly, Va	84	18.00	4.7
Georgetown, S. C., and Cains Landing—Peedee River	86	24.00	3.6
Philadelphia, Pa., and Frederica, Del	90	10.00	9.0
Newburgh and Troy, N. Y	91	11.00	8.3
New York and Saugerties, N. Y	98	10.00	9.8
Kissimmee and Fort Bassenger, Fla	100	48.00	2.1
Norfolk and Richmond, Va	116	12.00	9.7
Baltimore, Md., and Philadelphia, Pa	120	12.00	10.0
Baltimore and Salisbury, Md	142	15.00	9.5
Jacksonville and Sanford, Fla	147	18.00	8.2
Baltimore and Bristol, Md	150	24.00	6.2
Baltimore, Md., and Seaford, Del	160	16.00	10.0
Hartford, Conn., and New York, N. Y	162	14.00	11.6
Baltimore, Md., and Norfolk, Va	184	[1] 12.50 [1] 12.00	[1] 14.7 [1] 15.3
Baltimore, Md., and West Point, Va	195	15.00	13.0
Savannah and Augusta, Ga	202	84.00	2.4
Baltimore, Md., and Tappahannock, Va	225	17.00	13.2
Baltimore, Md., and Fredericksburg, Va	285	40.00	7.1
Macon and Brunswick, Ga	370	36.00	10.3
Mississippi River and tributaries, including Gulf slope.			
Between—			
Memphis, Tenn., and Mount City, Ark	4	1.00	4.0
Shawneetown and Cave in Rock, Ill	25	6.00	4.2
Charleston and Montgomery, W. Va	28	10.00	2.8
Cairo, Ill., and Paducah, Ky	45	[2] 4.00 [3] 5.00	[2] 11.2 [3] 9.0
Lake Charles and Cameron, La	53	7.00	7.6
Alton and Hamburg, Ill	54	30.00	1.8
Charleston, W. Va., and Gallipolis, Ohio	62	[1] 24.00 [1] 10.00	[1] 2.6 [1] 6.2
Memphis, Tenn., and White Hall, Ark	65	12.00	5.4
Albany and Bainbridge, Ga	69	12.00	5.8
Shawneetown and Rosiclare, Ill	76	10.00	7.6
New Orleans and Donaldsonville, La	79	18.00	4.4
St. Louis, Mo., and Rip Rap, Ill	90	48.00	1.9
St. Louis, Mo., and Hamburg, Ill	90	48.00	1.9
Vicksburg and Natchez, Miss	100	36.00	2.8
Chattanooga and Kingston, Tenn	104	40.00	2.6
Memphis, Tenn., and Friar Point, Miss	105	12.00	8.8
St. Louis and Louisiana, Mo	107	12.00	8.9
Cincinnati, Ohio, and Louisville, Ky	128	[2] 12.00 [1 3] 15.00	[2] 10.7 [3] 8.5
Evansville, Ind., and Paducah, Ky	137	36.00	3.8
Britts Landing, Tenn., and Paducah, Ky	138	24.00	5.8
Chattanooga, Tenn., and Decatur, Ala	160	96.00	1.7
Apalachicola, Fla., and Bainbridge, Ga	173	16.00	10.8
Evansville, Ind., and Louisville, Ky	185	30.00	6.2

[1] These quotations are from different boats. [2] Downstream. [3] Upstream.

TABLE 4.—*Distance and time of transit over selected river routes in the United States during September and October, 1912*—Continued.

Route.	Miles.	Hours.	Miles per hour.
Mississippi River and tributaries, including Gulf slope—Continued.			
Between—			
Bowling Green, Ky., and Evansville, Ind	190	30.00	6.3
St. Louis, Mo., and Peoria, Ill	200	30.00	6.7
Cincinnati, Ohio, and Parkersburg, W. Va	200	24.00	8.3
Memphis, Tenn., and Arkansas City, Ark	209	30.00	7.0
Mobile and Demopolis, Ala	230	48.00	4.8
New Orleans and Bayou Teche, La	[1] 240	40.00	6.0
Memphis, Tenn., and Cairo, Ill	254	38.00	6.7
Charleston, W. Va., and Cincinnati, Ohio	263	48.00	5.5
Memphis, Tenn., and Paducah, Ky	299	46.00	6.5
Mobile and Selma, Ala	308	72.00	4.3
Charleston, W. Va., and Pittsburgh, Pa	325	[2] 48.00 [3] 72.00	[2] 6.8 [3] 4.5
New Orleans and Harrisonburg, La	340	150.00	2.3
Columbus, Ga., and Apalachicola, Fla	360	132.00	2.7
Vicksburg, Miss., and Memphis, Tenn	370	72.00	5.1
St. Paul, Minn., and Davenport, Iowa	378	60.00	6.3
Kansas City and St. Louis, Mo	407	[2] 40.00 [3] 60.00	[2] 10.2 [3] 6.8
Memphis, Tenn., and St. Louis, Mo	415	72.00	5.8
New Orleans, La., and Carriola, Ark	446	84.00	5.3
Cincinnati, Ohio, and Pittsburgh, Pa	470	84.00	5.6
Cincinnati, Ohio, and Memphis, Tenn	749	108.00	6.9
Pacific slope.			
Between—			
Kennewick and White Bluff, Wash	42	8.00	5.2
Brewster and Wenatchee, Wash	70	[2] 7.00 [3] 13.00	[2] 10.0 [3] 5.4
Wenatchee and Bridgeport, Wash	79	[2] 8.00 [3] 20.00	[2] 9.9 [3] 4.0
San Francisco and Walnut Grove, Cal	80	8.00	10.0
San Francisco and Stockton, Cal	94	12.00	7.8
San Francisco and Sacramento, Cal	112	12.00	9.3
Kennewick, Wash., and Portland, Oreg	239	30.00	8.0

[1] Boat routes from New Orleans to St. Martinsville range from 174 to 257 miles.
[2] Downstream.
[3] Upstream.

TABLE 5.—*Number of intermediate landings and average distance between landings over selected routes.*

Route.	Number of intermediate landings, as reported.	Miles.	Average miles between landings.
Between—			
Cincinnati, Ohio, and Memphis, Tenn	346	749	2.16
St. Louis, Mo., and Memphis, Tenn	318	415	1.30
St. Louis, Mo., and Waterloo, Ala	267	513	1.91
Apalachicola, Fla., and Columbus, Ga	246	360	1.46
Pittsburgh, Pa., and Cincinnati, Ohio	141	470	3.31
Evansville, Ind., and Bowling Green, Ky	71	190	2.64
Baltimore, Md., and Fredericksburg, Va	34	285	8.38 [1] 3.12
Hartford, Conn., and New York, N. Y	12	162	12.50 [1] 4.33
Baltimore, Md., and Seaford, Del	12	160	12.31 [1] 3.42
Baltimore, Md., and Norfolk, Va	1	184	92.00

[1] Average for part of route on which the group of intermediate landings are located. Distances: Hartford to mouth of Connecticut River, about 52 miles; Fredericksburg to mouth of Rappahannock River, about 106 miles; Seaford to mouth of Nanticoke River, about 41 miles.

TABLE 6.—*Summary of average rates of speed of steamboats on inland waterways.*

Rate, miles per hour.	Number of average rates reported.			
	Atlantic slope.	Mississippi Valley, including Gulf slope.	Pacific slope.	Total.
Less than 4	3	12	0	15
4 and less than 6	4	15	3	22
6 and less than 8	4	14	1	19
8 and less than 10	13	5	3	21
10 and less than 12	9	4	2	15
12 and over	10	0	0	10
Total	43	50	9	102

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TABLE 5.—*Summary of average relative speed of steamboats on inland waterways.*

Rate, miles per hour.	Number of average rates reported.			
	Atlantic slope.	Mississippi Valley, including Gulf slope.	Pacific slope.	Total.
Less than 4	5	12	0	17
4 and less than 6	4	15	3	22
6 and less than 8	4	14	1	19
8 and less than 10	13	3	1	17
10 and less than 12	9	1	3	13
12 and over	10	0	0	10
Total	45	45	8	98

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